June 12, 1989

COST-EFFECTIVE ENFORCEMENT: A Framework For The Evaluation Of The Enforcement Authorities of The Environmental Protection Agency

DRAFT REPORT

By the

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Cooperative Agreement No. CR-813617-02

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NOTICE

This document is a preliminary draft. It has not been formally released by the United States Environmental Protection Agency and should not at this stage be construed to represent Agency policy. It is being circulated for comments on its technical merit and policy implications.

EXECUTIVE SUMMARY

Enforcement of environmental laws and regulations is one of the most important functions of the United States Environmental Protection Agency (EPA or the agency). Through enforcement, the agency strives to deter violations of and encourage compliance with pollution control requirements. Because the agency has limited enforcement resources, it must seek to achieve these goals in the most cost-effective manner.

In order to promote deterrence effectively, the agency must recognize the primary motivations behind noncompliance behavior, and use its available enforcement tools (i.e., the laws and regulations that comprise EPA's enforcement response mechanisms) in a manner that is capable of counteracting these motivations. The enforcement literature contains several theories concerning the factors that motivate compliance behavior and how enforcement systems should be structured to counteract these factors. Although the various theories are significantly different, they generally agree that the primary motive behind corporate noncompliance behavior is the desire to avoid the costs imposed by regulations. This suggests that enforcement programs must seek to reach the economic self-interest of the regulated community by ensuring that the perceived expected costs to corporations of noncompliance outweigh the expected benefits.

This report is the first phase of a two phase study by the Environmental Law Institute (ELI) designed to examine the poten-

tial Cost-effectiveness of EPA's enforcement programs. It develops a framework to examine qualitatively the deterrent potential of EPA's enforcement authorities by analyzing the ability of the authorities to affect the expected costs of corporate noncompliance. Recognizing that EPA's enforcement resources are limited, the evaluation framework also is designed to permit examination of the potential level of implementation costs associated with enforcement tools. The evaluation framework identifies nine attributes of enforcement that affect firms' expected costs of noncompliance and/or agency implementation costs. These attributes are used to evaluate qualitatively the potential deterrent benefits and costs of selected enforcement authorities under the Resource, Conservation and Recovery Act of 1976 (RCRA) and Federal Water Pollution Control Act (the CWA or Clean Water Act).

This preliminary evaluation of selected EPA enforcement authorities suggests that, in general, the Congress has provided EPA with statutory enforcement powers that are less than ideal. For the most part, EPA enforcement tools are not powerful, comprehensive or easy to use. Many of these tools do not appear to significantly affect the expected costs of corporate noncompliance, and thus may not effectively promote deterrence and do not minimize the use of agency resources. Moreover, even when the Congress has provided potentially powerful deterrent mechanisms, the agency often has adopted regulations that appear to diminish the deterrent power of these tools and/or hamper their potential application.

The study illustrates the need for EPA to evaluate carefully the deterrent effect of its enforcement tools and the costs of their implementation. The nine attributes set forth in this study can be used to conduct such an evaluation. These attributes represent an important first step in examining the cost-effectiveness of EPA's enforcement authorities and programs.

A comprehensive analysis of EPA enforcement authorities could help the agency identify the relative merits of such authorities and their most appropriate use within a cost-effective enforcement program. Furthermore, the enforcement attributes can help the agency communicate to the Congress the types of enforcement powers it needs in order to enforce environmental laws and regulations cost-effectively.

CHAPTER 1

INTRODUCTION

A. OVERVIEW

This report is the first phase of a two-phase study designed to examine and qualitatively evaluate the effectiveness of the enforcement program of the Environmental Protection Agency ("EPA" or "the agency"). Phase I of the study analyzes selected enforcement authorities available to EPA under two environmental laws,[1] and evaluates the merits of these statutory provisions and their implementing regulations with respect to nine attributes of cost-effective enforcement.[2] Phase II of the study will examine additional EPA enforcement authorities, and study the potential for improving the cost-effectiveness of EPA's enforcement program through modifications to environmental laws, regulations, and agency strategies, guidance and procedures. Phase II also will examine alternative enforcement mechanisms that traditionally have not been part of the federal environmental enforcement program, and,review potential uses of non-environmental laws to encourage compliance with environmental laws.

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[1] This Phase of the study examines, as representative statutes, the Resource, Conservation and Recovery Act of 1976, as amended, 42 U.S.C. sections 6901-6991, (RCRA) and the Federal Water Pollution Control Act of 1972, as amended, 33 U.S.C. sections 1251-1387 (the Clean Water Act or CWA).

[2] The statutory provisions relating to enforcement and their implementing regulations are referred to herein as "authorities" or "tools" of enforcement.

B. THE STUDY PERSPECTIVE

This study utilizes an economic perspective to examine environmental enforcement. First, the analysis is based on the premise that the primary motive behind corporate compliance and noncompliance behavior is economic self-interest. Noncompliance is assumed to result primarily from the desire to reduce regulatory costs, while compliance is assumed to result chiefly out of the desire to avoid sanctions or the indirect economic consequences of noncompliance.

Corporate compliance behavior likely is affected by a wide-ranging set of factors and forces, many of which ultimately have an economic component. Even factors that appear on the surface not to have economic consequences trigger economic effects. For example, some firms may comply with environmental regulations not because of fear of the direct sanctions imposed by enforcement action, but rather because of concern for their public reputations. The negative publicity surrounding enforcement actions may lead indirectly to economic consequences through loss of corporate prestige and customers.

The assumed economic motivations behind compliance behavior leads to a second major assumption utilized in this study: that EPA enforcement programs must marshal1 their tools and resources to influence and modify the economic self-interest of the regulated community. In other words, detection efforts and sanctions should be used to promote economic deterrence.

Finally, the analysis of enforcement authorities is viewed from a cost-effectiveness perspective. In this report, EPA's enforcement authorities are analyzed within a cost-effectiveness framework in which the goal of enforcement is to achieve the greatest possible deterrent effect with the available agency enforcement resources.

This approach is chosen for two reasons. First, because most environmental statutes and regulations have established specific levels and methods of pollution control, these levels must be treated as optimal from an enforcement perspective. Thus, the primary aim of any environmental enforcement program should be to secure and maintain the highest possible rate of compliance with the statutory and regulatory mandates. Second, in the immediate future the resources available to agencies such as EPA are likely to remain fixed or (at best) increased slightly, even though the agency will be expected to expand its programs and enforcement activities.

This report analyzes EPA enforcement by asking two fundamental questions: (1) Given its resource constraints, does EPA have the tools necessary to influence the expected costs of noncompliance, and (2) has EPA adopted strategies and regulations that enhance the enforcement capabilities of its tools. If effective enforcement tools do not exist, it does not matter how many or few enforcement actions are brought. Likewise, if EPA has adopted regulations, policies and strategies that hamper its ability to use statutorily-created tools, then enforcement

actions cannot be expected to achieve desired results. EPA's ability to carry out effective enforcement is a function of enforcement tools it has been given to do its job, the nature of the regulations adopted to implement the tools, the development of enforcement strategies which maximize the force and effect of the tools, and its available enforcement resources.

To our knowledge, there are no existing studies that address these issues or that seek to evaluate EPA's programs from this perspective.

C. THE STUDY METHODOLOGY

This study evaluates EPA's enforcement authorities not by counting enforcement actions, or evaluating the perceived "quality" of EPA settlements and outcomes of such actions, but from a quite different viewpoint. The study approach focuses on qualitatively assessing the potential effectiveness and costs of enforcement tools -- i.e., enforcement authorities -- which EPA has been given (or has created) to do its job.

The effectiveness of an enforcement tool is defined and qualitatively measured in terms of its ability to raise the expected costs of noncompliance among the regulated community.[3] The higher the potential sanction a tool can impose, the more potent its deterrent effect. In this report, the costs of an enforcement tool are defined as the potential range of costs to

[3] See infra note 4.

the agency of implementing it successfully. The fewer the agency resources required to implement a tool, the more resources will be available for other enforcement actions.

To facilitate this analysis, this report develops nine attributes of an enforcement program that can increase the potential deterrent benefits and/or minimize the agency costs of enforcement action. While these are defined as attributes of a cost-effective enforcement program, they apply equally well to the individual enforcement tools that are the building blocks of any program. Using these attributes to examine the enforcement authorities available to EPA facilitates the evaluation of the potential strengths and weaknesses of these tools from an enforcement perspective.

This study approach was chosen because we believe that the evaluation of the potential cost-effectiveness of an enforcement program must first begin with a careful analysis of the potential agency costs and deterrent benefits of its available enforcement tools. With a clear understanding of the strengths and weaknesses of the enforcement tools at its disposal, the agency will be in a better position to determine their appropriate use within a cost-effective enforcement program.

D. THE ORGANIZATION OF THE REPORT

The remainder of this report is organized into four chapters. Chapter 2 discusses various enforcement theories, and provides a review of the economic and behavioral literature

addressing the factors that deter noncompliance with environmental laws, and the importance of these factors for effective enforcement. In this chapter we also review some recent trends in EPA's use of its enforcement authorities.

Chapter 3 provides a framework for qualitatively evaluating the effectiveness and costs of environmental enforcement authorities, and sets forth nine features or attributes of cost-effective enforcement programs and authorities. These attributes draw upon information presented in Chapter 2 concerning compliance and noncompliance behavior, litigative experience, and a review of the important substantive, procedural and institutional factors relating to the implementation of the enforcement tools. This chapter concludes by illustrating the nine attributes in a fictional enforcement authority -- a business license.

Chapter 4 applies the attributes to selected RCRA and Clean Water Act enforcement authorities. Each tool (e.g., permit, civil penalty, contractor listing) is evaluated with respect to the attributes to illustrate qualitatively their potential deterrence benefits and agency implementing costs.

Chapter 5 concludes by reviewing the analysis of Chapters 3 and 4, and formulating conclusions regarding the effectiveness of the analyzed enforcement authorities. It points out that, on the whole, EPA's enforcement tools do not embody the attributes of cost-effectiveness.

CHAPTER 2

ENFORCEMENT OF ENVIRONMENTAL LAWS: THEORY AND PRACTICE

A. INTRODUCTION

The goal of any enforcement program is to deter violations of the laws and regulations by encouraging compliance among members of the regulated community, and sanctioning members who do not comply. Thus, in order to design an effective enforcement program, it is crucial to understand the factors that motivate compliance within the regulated community -- the compliance behavior of corporations.[4]

An enforcement program will be most effective if structured around authorities aimed at influencing corporate compliance behavior. Determining the major influences affecting corporate compliance, however, is not a simple problem with a single, well-defined solution. Compliance behavior is influenced by a complex and wide-ranging set of factors and forces, and an effective enforcement program may need to rely on a mix of authorities capable of harnessing these influences.

This chapter reviews several corporate compliance theories and their recommendations for structuring enforcement programs

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[4] For purposes of this report, we have confined our discussion and analysis to a hypothetical regulated community composed entirely of corporations (referred to herein as "corporations," "firms," "members of the regulated community," and "businesses"). We believe, however, that our analysis of corporate compliance behavior is applicable to other for-profit, privately owned business organizations (e.g., partnerships, joint ventures, sole proprietorships).

and using particular types of enforcement tools and strategies, as well as the available evidence regarding their potential efficacy in the context of enforcing environmental laws. Unfortunately, few empirical studies of the effectiveness of different enforcement strategies and tools have been undertaken, so there is little hard evidence to support or reject these theories. In this context, empirical investigation of the effectiveness of enforcement tools and strategies is still in its infancy.

Despite the lack of empirical data, a growing body of literature highlights the advantages and disadvantages of different strategies for enforcing regulations that affect economic activity. Much of this literature debates the use of alternative enforcement tools and strategies based strictly on theoretical reasoning, citing only indirect or fragmentary empirical evidence. Our review concentrates on what this literature has to say concerning corporate compliance and noncompliance behavior with regard to environmental regulations, and the potential cost-effectiveness of alternative enforcement strategies and tools. Throughout this review, we also comment on some of the general approaches employed by the existing federal environmental enforcement system, and how certain elements of this system draw on the various compliance theories and their policy prescriptions.

Initially, this review focuses on the economic theory of enforcement. This is a useful starting point because the field of economics has provided a simple model of enforcement based on

economic considerations underlying corporate noncompliance behavior. Moreover, our current system of federal environmental enforcement is based in large part on the assumption that environmental violations are primarily motivated by economic factors, and that enforcement programs should eliminate the potential gains accruing from noncompliance.

We first review briefly the salient features of the economic theory of enforcement and broadly outline its policy implications in the context of environmental enforcement. Next, we review various criticisms of the theory's validity and the practicality of its policy prescriptions. These criticisms have led to the development of alternative theories of environmental enforcement. We then discuss briefly the philosophies underlying these alternative theories and their recommendations regarding the effectiveness of particular enforcement tools and strategies. We conclude the chapter with a summary of the major themes that characterize the literature and their implications for the design of cost-effective environmental enforcement.

B. ECONOMIC THEORY OF ENFORCEMENT

1. The General Case: Efficiency in the Enforcement of Laws

Economic theory was first applied to the analysis of illegal behavior and its control in 1968 by Gary **Becker.**[5] He developed a

[5] Becker, Crime and Punishment: An Economic Approach, 76 J. Pol. Econ. 169 (1968).

simple model of the socially optimal level of enforcement based on an assumed economic motivation behind certain types of criminal behavior (e.g., theft, extortion, etc.). According to Becker, the key variable that individuals would consider when deciding whether to commit a crime is the expected penalty associated with getting caught, convicted, and fined. Becker's basic assumption was that all penalties for criminal behavior have a monetary equivalent (i.e., an offender would be indifferent between accepting a specific jail term and paying a particular monetary fine). The expected penalty is simply the product of the monetary fine for the offense and the probability of being caught and convicted. Under Becker's theory, if individuals are risk-neutral and are solely motivated by economic concerns, then they will be indifferent between the imposition of a high fine and a low probability of detection and the imposition of a low fine and a high probability of detection, assuming that the magnitude of the expected values of the penalties in the two cases is identical.

The decision to commit a particular offense would be based on a comparison of the expected penalty associated with getting caught (i.e., expected cost) with the expected monetary gain from committing the offense (i.e., expected benefit). Becker thus assumed that an individual would decide whether to pursue illegal behavior based on a personal cost/benefit calculus: if the expected cost of committing a particular offense was equal to or greater than the expected benefit, he or she would choose not to

commit the offense. On the other hand, if the expected benefit exceeded the expected cost, the decision would be reversed. Since the expected cost element of each individual's cost/benefit calculus is determined by government enforcement policies regarding monitoring efforts to detect offenses and enforcement actions to levy penalties, Becker assumed that these policy variables could be used together to counteract the economic motivations underlying illegal behavior.

Becker framed his analysis in terms of the enforcement of laws that make any level of certain activities illegal. In this context, Becker suggested that by manipulating the two policy variables available to enforcement authorities -- the level of detection monitoring (p) and the level of the fine imposed (f) -- the government could pursue several different law enforcement policy objectives. For example, if the government wanted to ensure that laws were never broken (i.e., if complete deterrence were the only aim of enforcement), the government could simply set p close to one (so that all offenses would be detected) and set f equal to the level of monetary gain from the offenses. This policy would seek to prevent the damages to society from illegal behavior by completely eliminating the economic incentives that motivate offenses.

Alternatively, if making the "punishment fit the crime" were the sole objective of enforcement policy, the government could set p close to one and set f equal to the monetary social damages

resulting from offenses (as measured by society's willingness-to-pay to avoid these damages).

Such a policy would not focus on preventing offenses per se, but rather would seek to punish offenders in accordance with the value of the damages that their illegal activities impose on society. Because fines represent a transfer of wealth from offenders to the government, this punishment would also serve to compensate society for the damages caused by offenses.

These two enforcement policy objectives would be sufficient to achieve their respective objectives, but Becker argued that because they do not account for the social resources devoted to enforcement, they would not necessarily lead to the socially optimal (economically efficient) level of enforcement. Specifically, these objectives do not include the costs of increasing the level of p to the point at which all violations are detected, plus the costs of prosecuting offenders and securing fines at desired levels. The economically efficient level of enforcement is defined as the level of control that minimizes the sum of the social resources expended on enforcement and the net social damages resulting from offenses. The minimization of these social losses determines the optimal level of enforcement, and indirectly determines the levels of p and f required to secure this result.

This conclusion simply applies the more general economic efficiency or welfare criterion to enforcement and suggests that at the level of enforcement which maximizes net social benefits,

society may be required to tolerate some level of offenses because the social cost of eliminating them would exceed the social value of the damages they generate. According to this conclusion, enforcement expenditures should yield a diminution in offenses at the margin, the value of which (as measured by society's willingness-to-pay to avoid the damages the offenses impose) should equal the return these enforcement resources could generate if used in other areas. The Becker model derives the conditions that define the economically optimal level of enforcement and the levels of p and f required to achieve this result.

Becker first describes these conditions under the assumption that the costs of apprehending and convicting violators are zero. In this case, the optimal level of tolerated offenses would be determined by the balancing of marginal private gains from offenses with the marginal harm to society (i.e., where net marginal damages equal zero). This level of offenses could be induced if marginal expected penalties were set so as to equal the marginal harm caused by the offenses. Since enforcement costs are assumed to equal zero, p could be set at unity and the level of fines should then be equated with the marginal harm caused by offenses at the optimal level of control. In reality, however, the costs of apprehending and convicting violators are positive, and the optimal conditions thus depend upon the marginal enforcement costs as well as the marginal damages caused by offenses. Thus, the level of expected penalties that would

induce the optimal level of offenses would equal the sum of marginal damages plus the marginal costs of enforcement.

The optimal levels of the two enforcement mechanisms, detection monitoring and fines, depend on the respective marginal costs of increasing each of these two variables. Becker assumed that the marginal cost of raising the level of monitoring to detect violations (p) would be much greater than the marginal cost of raising the level of the fine (f), because he believed that the latter was largely independent of the magnitude of the fine sought. Based on this reasoning he concluded that determination of the optimal levels of p and f were clear. As long as offenders did not have a preference for risky behavior and were motivated solely by economic concerns, the social loss from crime and punishment could be minimized by setting p close to zero and adjusting f to induce the efficient level of tolerated offenses (i.e., high fines should be used to compensate for a low probability of detection). Because increasing the probability of detecting violations is more costly than raising fines, only a minimum amount of enforcement resources should be devoted to detecting violations, while the level of fines should be adjusted upward to achieve the desired policy result.

Becker's conclusion that the level of enforcement should be dictated by an efficiency criterion is generally accepted as one valid policy objective for enforcing certain types of laws. On the other hand, Becker's reasoning concerning how p and f can be

structured to maximize the net social benefits from enforcement has been criticized almost universally.

Several analysts have noted that setting fines at levels high enough to compensate for a low probability of detection would result in draconian fines for almost all offenses, regardless of their nature and degree. It is argued that this is unfair and could easily undermine the credibility of the enforcement authority. Furthermore, it has been argued that aside from equity considerations, high across-the-board sanctions may provide perverse incentives to potential violators. For example, if a possible offender faces a fine nearly equal to the value of his wealth whether he snatches a purse or robs a bank, all other things being equal, he would likely choose to commit bank robbery. Since the expected fines associated with these offenses are essentially equivalent, the high fines would encourage violators to commit the more egregious offense, because it is associated with a substantially greater expected gain. George Stigler argues that individual fines therefore must be structured to provide greater deterrence for more serious offenses.[6]

More recently, others have disputed Becker's assumption that the costs associated with implementing fines are largely independent of the level of the fine sought by the government. Roland McKean points out that higher fines may induce regulated entities to engage in avoidance behavior which raises the difficulty (and

[6] Stigler, The Optimum Enforcement of Laws, 78 J. Pol. Econ. 526 (1970).

thus the social costs) of detecting and responding to offenses.[7] Also, higher fines may be associated with higher standards and greater burdens of proof, requiring more social resources for enforcement actions (e.g., greater resources devoted to case preparation and litigation). Thus, the economically efficient level of enforcement depends on the interrelationships and costs of manipulating the two enforcement policy mechanisms p and f. Factors such as the marginal costs of increasing monitoring, the marginal costs of detecting violations, and the effect of high fines on potential violators greatly complicate the determination of p and f at optimal levels of enforcement, and thus the theoretical design of optimal levels of p and f.

2. Enforcement in the Environmental Context: Efficiency Versus Cost-Effective Deterrence

In the context of criminal behavior, Becker's economic theory of enforcement (set forth above) guides the determination of the amount of social resources that should be devoted to the enforcement of laws, suggests how these resources should be divided between government policies designed to detect violations, and analyzes the effect of setting and pursuing various levels of monetary penalties. We next examine whether Becker's theory has practical policy implications which are applicable to the design of environmental enforcement programs.

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[7] McKean, Enforcement Costs in Environmental and Safety Regulation 1980 Pol'y Analysis 269.

The Becker model was developed in the context of the enforcing laws that seek to eradicate completely certain behavior. These laws make it illegal for any person to undertake any level of certain activities, regardless of their potential social costs and benefits. Recognizing that enforcement of these laws is costly to society, Becker's model of optimal enforcement seeks to determine the level of social resources that should be devoted to the enforcement of these laws in order to maximize net social benefits from the control of criminal behavior.

Laws that seek to regulate economic activity, such as environmental laws, are somewhat different from the criminal laws to which Becker applied his enforcement model. In general, environmental laws do not seek to eliminate completely behavior that may cause harm to the environment, but rather seek to limit or otherwise place constraints on such harmful behavior. The major environmental statutes primarily are concerned with protecting human health and welfare, and set regulatory standards relating to allowable pollution emissions or ambient environmental quality. Some authors have argued that the emphasis on protecting human health and the environment has resulted in environmental laws and regulations based primarily on low-risk standards that do not strike a balance between social costs and benefits.[8]

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[8] See, e.g., W. Viscusi & W. Magat, Economic Efficiency of Enforcement and Enforcement-Related Monitoring (March 1986) (draft report prepared for the United States Environmental Protection Agency, Office of Policy Analysis).

Whether environmental standards and regulatory controls are on the whole more or less stringent than those that would be dictated by economic efficiency considerations is a debatable issue. The important point for enforcement is that, in general, environmental controls have set non-zero levels of pollution-causing activities or other environmental hazards. From an enforcement perspective, these may have to be viewed as "optimal" levels, regardless of the potential relative social costs and benefits of achieving them.

What does this difference in the nature of environmental laws and their implementing regulations imply for the applicability of the policy prescriptions of Becker's enforcement model? Because the desired environmental levels have already been established by statute or regulation, an enforcement program using monetary penalties fashioned according to the Becker formula would create a program different from that of the statutory and regulatory environmental standards. Specifically, expected penalties based on efficiency considerations would allow for benefit/cost tradeoffs not considered in setting the statutory and regulatory standards.

Current environmental enforcement efforts at the federal level rely on various EPA informal and formal responses to discovered violations. In terms of its formal responses, EPA tends to use civil penalties to address recalcitrant and repeated violators, and particularly egregious violations. For example, EPA has sought penalties in 93% of its formal actions against

hazardous waste violators, and 81% of its formal actions against violators of air laws and regulations.[9] These civil penalty authorities are viewed by the agency as the primary means to penalize and deter noncompliance behavior.

Some authors have argued that EPA could use its civil penalty authorities to remedy the potential efficiency shortcomings of environmental standards that may not strike a balance between regulatory costs and benefits.[10] However, the theoretical and practical design of civil penalties for this purpose is not straightforward. For example, the Becker model tells us that the levels of p and f that would maximize the net benefits of pollution control enforcement are a complex function of the following factors:

1) the marginal economic value of health and environmental damages resulting from violations (as measured by society's willingness-to-pay to avoid these damages);

2) the marginal private costs to regulated entities of achieving compliance;

3) the marginal costs of enforcement action (e.g., the costs of monitoring and investigation to detect violations as well as the costs of bringing formal actions against violators); and

4) the mechanisms by which enforcement efforts affect compliance rates (e.g., the degree to which increased levels of p increase the perceived probability of

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[9] See C. Wasserman, Environmental Compliance and Enforcement: Theory, Practice, and the Challenge to Environmental Economists at 31 (paper delivered to the Association of Environmental and Resource Economists at a workshop on Environmental Monitoring and Enforcement, Newark, Del., July 14, 1987).

[10] See supra p. 17.

detection and penalization, and the effect of this perception on compliance behavior).

The first three factors were discussed earlier as determinants of Becker's optimal expected penalty model. The second factor -- the marginal costs to regulated entities of achieving compliance -- is what Becker termed the private gain that offenders derive from offenses. In other words, in Becker's model compliance costs avoided as a result of noncompliance are equivalent to the private gain derived by offenders. The fourth factor was an implicit determinant in the Becker model. It holds that the determination of efficient levels of enforcement activity requires an understanding of how enforcement mechanisms affect compliance rates. For example, in order to determine optimal levels of detection monitoring it is necessary to determine how efforts to increase the probability of detection affects corporate perceptions of these probabilities, and the effects of these perceptions on compliance rates. This is important because increasing the level of p may have a greater effect on expected penalties than increasing fines by an equal percentage, if the regulated community perceives the probability of detection to be greater than it really **is.**[11] Moreover, corporations' risk preferences also will determine how p affects corporations' compliance decisions relative to f.

[11] See, e.g., Diver, A Theory of Regulatory Enforcement, 28 J. Pub. Pol'y 257 (1980).

A recent study on the use of civil penalties to enforce the regulatory requirements of the Clean Water Act[12] illustrates that optimal expected penalties do not depend on the above variables in any straightforward way. There is no simple formula that will provide the optimal levels of p for particular areas or industries, or the level of fines in individual cases. Moreover, the variables differ across regulated communities and from corporation to corporation and are not readily identified or estimated. Determining the marginal damages avoided associated with enforcement efforts is particularly troublesome. Marginal damage avoidance estimates depend upon accurately estimating the physical impacts on human health and the environment of changing levels of compliance, and the accurate social valuation of these impacts. As Clifford Russell notes, "[w]hile much effort and ingenuity have gone into improving methods and data bases for damage (benefit) estimation in the pollution control field, the available measures are still for the most part crude and aggregate relative to the rather fine-scale marginal damage estimates required for monitoring and enforcement system design."[13]

Of course, this situation may not be particularly troublesome given the emphasis of the current federal enforcement policy

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[12] ICF Incorporated, Enforcement of the Clean Water Act: Theory, Policy, and Practice (Jan. 31, 1987) (report prepared for the United States Environmental Protection Agency, Office of Policy Analysis).

[13] C. Russell, Designing a Pollution Control Enforcement System Using Game Theory Notions at 2 (working paper, Vanderbilt Institute for Public Policy Studies, undated).

on securing and maintaining compliance at levels set by environmental standards. Consistent with this objective of enforcement policy, civil penalty assessments are viewed by the EPA mainly as a means of deterring deviations from set compliance levels.[14] The current EPA penalty policy states that penalties should be set at levels that at a minimum recoup the noncompliance benefits gained by violators. The penalty policies allow for individual penalties to be adjusted upward by other factors, including a gravity component reflecting the severity of the violation, its potential damage to society, and the compliance history of the violator.

The use of penalties set according to the formula used by EPA is a logical approach to enforcing environmental requirements if the aim of enforcement policy is to secure compliance at levels set by the standards. If monetary penalties could be designed and secured in amounts sufficient to eliminate potential gains from noncompliance, in theory they can be used effectively to deter noncompliance activity that is driven primarily by economic considerations. On the other hand, detecting violators is difficult and costly, and the probability of detection is likely to be less than one. In order to secure civil penalties in amounts great enough to deter noncompliance behavior, monetary

[14] See, e.g., Memorandum from J. Winston Porter, Assistant Administrator, Environmental Protection Agency, to Regional Administrators, Regions I through IX, Revised Enforcement Response Policy (Dec. 21, 1987) (spelling out EPA's RCRA enforcement policy). (Revised Enforcement Response Policy also reprinted in Envtl. L. Rep. Admin. Materials (Envtl. L. Inst.) 35161.)

penalties must be adjusted upward to compensate for a lower probability of detection, or monitoring efforts must somehow be targeted so that violations will not go undetected.

In summary, Becker's primary contribution to the design of environmental enforcement programs relates to the formal recognition that environmental rules impose costs on regulated entities, and thus create economic incentives for violation. Consequently, if preventing noncompliance is the goal, an enforcement program should try to deter noncompliance through detection efforts and the use of monetary fines. Monetary fines are advocated for sanctioning environmental noncompliance because fines transfer wealth from violators to society.

One unique characteristic of environmental enforcement is that "optimal" levels have already been established by statute and by regulation. The objective of enforcement therefore is to secure and maintain compliance at such levels, not to promote economically efficient levels. The emphasis of enforcement shifts from achieving efficient levels to using the available enforcement resources to secure and maintain as much compliance as possible. The Becker model and its derivations provide insight to the design of enforcement tools and strategies to achieve this policy objective.

3. Objections to the Use of an Economic Deterrence Approach to Environmental Enforcement

The economic policy prescriptions advocated for achieving deterrence in the context of environmental enforcement have been criticized on both theoretical and practical grounds by various organizational theorists, legal scholars, and policy specialists. Some of these criticisms are discussed briefly below.

Several writers have questioned the view of the corporate world on which the economic theory of deterrence is implicitly based -- that regulated firms are unitary actors.[15] They argue that the goals of corporations may diverge from those of corporate employees who ultimately carry out corporate compliance decisions. For example, an employee may perceive noncompliance activities to be in his best interests even if they expose the firm to net costs. Thus, the economic deterrence value of enforcement tools may depend upon the cost-benefit calculus of individual corporate employee as well as that of the corporation itself.

The evidence for this argument rests on observations indicating that violations of environmental laws and regulations

[15] See, e.g., C. Stone, Where the Law Ends: The Social Control of Corporate Behavior (1975); Coffee, "No Soul to Damn, No Body to Kick"; An Unscandalized Inquiry into the Problem of Corporate Punishment, 79 Mich. L. Rev. 386 (1981).

sometimes are the result of decisions by a corporate employee that are beyond the explicit knowledge of top-level management.[16] This situation can occur in organizations with decentralized operational decision-making. In such organizations, corporate goals and objectives are set by top level management, but the means to achieve these goals are left primarily to mid-level managers in control of operating divisions. In making compliance choices, these mid-level managers may be motivated by desire for bonuses and promotions, or fear of demotion or dismissal.

For example, consider a manager who faces demotion or dismissal if he does not meet corporate goals for his division, and who perceives that these goals may not be met without violating environmental laws and regulations. If he perceives the risk of demotion/dismissal from the failure to meet corporate goals to be higher than the risk of punishment for violating environmental laws and regulations, the manager may choose to violate the environmental laws and regulations. This hypothetical case is perhaps an extreme example, but serves to illustrate that corporate compliance policy can diverge from the actual corporate compliance behavior. This potential dichotomy could undermine the

[16] See, e.g., Why Managers Cheat, Bus. Wk., March 17, 1980, at 196; Getschow, Overdriven Executives: Some Middle Managers Cut Corners to Achieve High Corporate Goals, Wall St. J., Nov. 8, 1979, at 1, col. 6.

efficacy of enforcement tools designed to influence only the economic motivations of corporate entities.[17]

A second major criticism of the economic deterrent approach to environmental enforcement deals with the potential inability of enforcement agencies to set the appropriate monetary penalty because the fine may exceed a corporation's ability to pay. For example, John Coffee argues that in the area of environmental regulation the probability of detecting and penalizing violators may be relatively low, because noncompliance often is concealed relatively easily, and the costs of detecting violations are substantial.[18]

At the same time, noncompliance with environmental regulations often provides substantial economic benefits to violators. The lower the probability that monitoring and investigation will uncover violations, and the greater the benefits of noncompliance to violators, the higher the fine must be for detected violators in order to ensure that expected penalties exceed the level of expected benefits from noncompliance.

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[17] Richard Posner and others have argued that if sanctions are high enough to deter corporations from noncompliance, corporations will have an incentive to take the necessary internal actions to prevent unlawful conduct by their employees. Thus, if firms view employee misconduct as too risky, they can implement internal reforms to weed out such misconduct. If actions by employees are competitively detrimental, an incentive exists for corporations to take appropriate steps to prevent employee misconduct. See generally R. Posner, Economic Analysis of Law (2d ed. 1977). See also Vaughan, Toward Understanding Unlawful Organizational Behavior, 80 Mich. L. Rev. 1377 (1982).

[18] Coffee, supra note 15.

In certain cases, the monetary penalties needed to deter violations may be greater than the violator's wealth, and if assessed would result in the closure of businesses. If environmental statutory and regulatory requirements are based on a social cost/benefit balancing, it is desirable from an economic efficiency standpoint to allow businesses that cannot meet environmental requirements to fail. In other words, enforcement actions justifiably can be used to close those businesses that cannot pay for the external damages their noncompliance activities impose on society. However, from an economic efficiency standpoint, if statutory and regulatory requirements are inefficiently set, it is not clear whether it is desirable to allow businesses to close as a result of enforcement actions. In general, EPA historically has avoided levying civil penalty fines that would result in the closure of businesses.[19]

A related constraint to securing penalties in amounts sufficient for economic deterrence involves institutional reluctance to levy civil penalties that may be associated with significant secondary impacts. In other words, appropriate levels of penalties may result in negative impacts to "innocent" third parties. For example, a high civil penalty fine may force a business to close or reduce some part of its operations, resulting in the dismissal of employees who worked on these operations. While the implications of these secondary impacts may be minimal from an

[19] Miller, Enforcement, in Law of Environmental Protection (S. Nuvick, ed. 1987).

economic efficiency standpoint, the equity implications can be important for securing the desired level of penalties. Evidence suggests that judges and juries resist the imposition of severe penalties for economic violations if such penalties may result in negative impacts to these parties.[20] Further, local law enforcement officials often are sensitive to the economic development interests of the locality in which they work, and may not wish to impose severe penalties that could hinder economic development in the locality. These concerns may result in lower than appropriate civil penalties in administrative and judicial proceedings.[21]

C. BEHAVIORAL THEORIES FOR THE ENFORCEMENT OF ENVIRONMENTAL REQUIREMENTS

1. Legalistic Enforcement Strategy

The theoretical and practical problems discussed above are often used to advocate alternative approaches to environmental enforcement. One alternative, sometimes termed a "legalistic" strategy, suggests a punishment-based approach to environmental enforcement, in which the punishment is based on some notion of the "gravity" of offense.[22]

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[20] Id.

[21] See C. Russell, W. Harrington & W. Vaughan, Enforcing Pollution Control Laws (1986).

[22] See, e.g., J. Dimento, Environmental Law and American Business: Dilemmas of Compliance (1986); J. Braithwaite, Corporate Crime in the Pharmaceutical Industry (1984); M. Clinard & P. Yeager, Corporate Crime (1980).

The legalistic strategy favors the use and threat of use of a wide array of enforcement tools and sanctions, ranging from monetary penalties for relatively minor violations, to plant shutdowns and full-blown criminal actions against corporations and individuals for serious and willful violations. There is a growing body of literature on the potential advantages of having a broad arsenal of sanctions available for enforcement activities.[23] Braithwaite suggests using an enforcement pyramid in which relatively small sanctions such as civil penalty fines serve as punishments at the base of the pyramid for the majority of violations that are probably minor in nature, and the use of criminal and other more serious sanctions at the apex of the pyramid to address serious and willful violations. Braithwaite argues that "[c]ompanies are . . . more likely to take notice of punishments when they are varied in nature rather than routine fines."[24]

The basic tenet of the legalistic approach is that it is not possible to rely simply on monetary incentives for deterrence because enforcement actions are unable to secure civil penalty fines in amounts large enough to compensate for low detection probabilities. Moreover, it is also argued that it is not desirable even to try to achieve deterrence through a heavy reliance

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[23] See, e.g., B. Fisse & J. Braithwaite, The Impact of Publicity on Corporate Offenders (1983); Clinard & Yeager, supra note 22.

[24] J. Braithwaite, To Punish or Persuade: Enforcement of Coal Mine Safety 166 (1985).

on civil penalties because this promotes a kind of "moral relativism" for noncompliance behavior, (i.e., that it is all right to violate the law as long as violators pay this added "cost of doing business"). The legalistic strategy instead stresses the need to selectively use relatively severe enforcement sanctions such as plant shutdowns, permit revocations and criminal actions that can increase the expected cost of noncompliance beyond that which simple monetary fines can achieve.

According to the legalistic theory, by increasing the expected cost of noncompliance, these alternative sanctions more efficiently promote specific as well as general deterrence.[25] Specific deterrence refers to the ability of enforcement action to deter individual violators from repeat violations. General deterrence refers to the ability of individual enforcement actions to deter the broader regulated community from violating. For example, because these types of sanctions typically have a major and immediate economic impact on firms to which they are applied, they may have a much greater and immediate deterrent impact on these firms than civil penalty fines. Additionally, unlike monetary fines, these sanctions help to create a greater enforcement "presence" that will affect positively the regulatory behavior of the entire regulated community. Thus, their selective use may be more cost-effective (in terms of compliance per dollar) than if civil penalties were levied for all detected

[25] See, e.g., Dimento, supra note 22.

violations. Essentially, the legalistic approach advocates increasing the expected costs of noncompliance through the use of enforcement tools and strategies other than monetary fines when such tools and strategies translate into monetary costs to corporations that may be more expensive than simple fines.

It is also argued that the use of certain legalistic tools such as criminal sanctions against corporate officers can effectively eliminate enforcement problems relating to the potential divergence between goals of corporate officials and corporate goals. Some writers argue that criminal sanctions are much more effective for deterring white collar crime than street crimes. Chambliss, for example, asserts that white collar crimes are more easily deterred because they are perpetuated by people who have no commitment to crime as a way of life; rather their offenses are "instrumental" acts based on calculated risks as opposed to "expressive" acts based on emotion. Chambliss also suggests that corporate officials may be easier to deter because they have more to lose from a criminal conviction, such as social status, responsibility and money.[26]

This argument has been extended by several authors who argue that while corporations cannot be thrown in jail, the stigma resulting from the publicity surrounding severe sanctions and criminal conviction might have a much greater deterrent effect on these entities than relatively large monetary fines. For

[26] Chambliss, Types of Deviance and the Effectiveness of Legal Sanctions, Wisc. L. Rev. 250 (1967).

example, Fisse and Braithwaite, in an examination of the effects of publicity surrounding the criminal conviction of several large corporations (including the Allied Chemical Company kepone disaster), conclude that large corporations probably are more sensitive to adverse publicity than monetary fines.[27] These authors contend that large corporations care greatly about their reputations, and adverse publicity is of concern not because of its potential direct financial effects, but because of the indirect economic impacts associated with the loss of corporate prestige. The following advantages of a good corporate image are cited: attraction of high quality personnel; increased ability to obtain credit in economically depressed periods; and greater appeal to potential investors. They point to the tremendous increase in corporate image advertising over the last several years as providing some evidence for the importance of corporate image. These arguments suggest that the adverse publicity associated with the more severe enforcement sanctions may further increase corporations' expected costs of noncompliance.

The Allied Chemical kepone disaster case study provides evidence of the potential specific deterrent effects of adverse publicity surrounding a criminal conviction for noncompliance with environmental requirements.[28] Fisse and Braithwaite contend that although the criminal conviction of Allied Chemical carried

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[27] Fisse & Braithwaite, supra note 23.

[28] Id. at 63-77.

substantial financial penalties (including $13 million in criminal fines for Clean Water Act violations; $15 million for state civil damages; and $.5 million paid to fishermen and fishing businesses as settlement of private tort actions), these impacts did not affect the short-term financial health of the company in any significant way. Company sales actually increased following the incident and stock prices did not show any meaningful decline. Rather, the publicity surrounding the incident had its major effect in terms of substantial internal corporate reforms initiated by Allied in the aftermath of the affair. These reforms included: upgrading the position of Environmental Affairs Manager to the vice-presidential level; the creation of an "Environmental Policy Committee" of the Board of Directors that included a special task force whose responsibilities include the on-site inspection of environmental compliance at the company's plants, the results of which are reported directly to the Board of Directors; and the introduction of financial incentives to corporate officers for attaining environmental compliance goals.

Critics of the legalistic approach to environmental enforcement argue that reliance on a broad range of punishment based, coercive enforcement responses may have certain potential disadvantages relating to implementation. For example, one potential disadvantage concerns the high costs of securing these types of enforcement responses because they are often associated with higher standards and greater burdens of proof than other

enforcement responses. Proponents of the legalistic approach counter that the substantial general deterrence effects of these actions result in the need for fewer actions against the regulated community, and may thus prove more cost-effective than a strategy that relies heavily on civil penalty fines. Another potential disadvantage concerns institutional constraints on the ability of the regulatory agency to secure more severe and coercive enforcement sanctions. As noted earlier in the discussion of civil penalty sanctions, judges may be unwilling to impose sanctions that may affect innocent third parties. On the other hand, criminal actions against corporations and their officers generally do not involve these types of effects, and their use has increased steadily over the last few years.[29] Further, some of the more severe sanctions, such as permit revocations, contractor listing, and plant shutdowns, may be implemented administratively. These tools have been infrequently used, however, at the federal level.[30]

2. Cooperative Enforcement Strategy

A related behavioral strategy for the design of enforcement programs -- the cooperative or compliance-based strategy -- appears, at least on the surface, to reject the basic assumption

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[29] McMurry & Ramsey, Environmental Crime: The Use of Criminal Sanctions in Enforcing Environmental Laws, 19 Loy. L.A.L. Rev. 1133 (1986).

[30] Miller, supra note 19.

underlying the economic deterrence-based enforcement approach: that corporate noncompliance chiefly is the result of rational economic decisions not to comply. Rather, this strategy is based on the concept of "voluntary compliance," which argues that most members of the regulated community will comply with regulations even when faced with expected penalties for noncompliance that may be less than benefits of noncompliance. Voluntary compliance assumes that corporations have a host of reasons for complying with laws and regulations, apart from direct economic or financial incentives in the form of penalties, or other sanctions. For example, corporations may comply with laws and regulations because of moral obligations to the law; pressure from competitors, employees and customers; concern for corporate image; and the desire to avoid increased dealings with regulatory agencies.[31] Of course, many of these factors can be translated into indirect economic impacts and thus cost.

The cooperative enforcement strategy stresses the need for regulatory agencies to work with the regulated community to achieve desired levels of compliance and to correct rather than punish the majority of violations that are neither willful nor serious.[32] Essentially, this enforcement philosophy advocates

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[31] See, e.g., Dimento, supra note 22; Russell, Harrington & Vaughan, supra note 21.

[32] See generally Braithwaite, supra note 24; E. Bardach & R. Kagan, Going By the Book: The Problem with Regulatory Unreasonableness (1982).

the use of persuasion over coercion whenever possible. The primary rationale underlying the cooperative enforcement approach is that by maximizing voluntary compliance, enforcement resources are freed to address the egregiously "bad actors."

The phrase "voluntary compliance" is somewhat misleading because associated enforcement systems typically must be backed by the threat of sanctions, even if these sanctions are reserved only for recalcitrant, serious, and willful violations and are infrequently used.[33] For example, John Scholz argues that "the worst case deterrence threat is what really determines the level of 'voluntary compliance' that firms and enforcement agency tacitly agree on. [Corporations] are not concerned with just the initial probabilities of detection and punishment, but with the long-term probabilities that increase dramatically as the agency focuses its attention on the major violators."[34] This argues that the use of sanctions against the bad actors is crucial to the success of any enforcement program based on voluntary compliance. Corporations will make efforts to comply as long as those that do not comply are punished, and the regulated community as a whole perceives that the regulatory agency will actively pursue violators.

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[33] Russell, Harrington & Vaughan, supra note 21; Dimento, supra note 22.

[34] Personal communication from John T. Scholz to Joseph F. Dimento (June 19, 1984), quoted in Dimento, supra note 22, at 83-84.

A few researchers have used game theory models to show that, if structured correctly, cooperative strategies that make use of penalties or other sanctions only for repeat violators and the really bad actors offer short-run economic incentives for compliance even when the penalties for noncompliance are small relative to compliance costs.[35] Under this enforcement system, corporations with bad compliance records would be subjected to more frequent monitoring. The system rewards compliance behavior with low monitoring, and punishes repeated noncompliance behavior with greater monitoring as well as penalties. Such a system may create corporate incentives to resist temptations to maximize short-run profits because of the long-run potential for increased monitoring and penalties.

The main advantage of this type of cooperative approach, it is argued, is that with limited resources available for monitoring and enforcement, this strategy can gain compliance in excess of what a rationally self-interested firm would engage in if the agency used all of its resources solely in a deterrent approach.[36] Scholz argues that corporations will prefer mutual

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[35] Russell, Harrington & Vaughan, supra note 21; W. Harrington, Explaining Voluntary Compliance: Why Do Sources Comply (Sort of) with Environmental Regulations in the Absence of Penalties for Noncompliance? (Nov. 1986) (draft discussion paper, Resources for the Future); Scholz, Cooperation, Deterrence, and the Ecology of Regulatory Enforcement, 18 L. & Soc'y Rev. 179 (1984).

[36] Russell, Harrington & Vaughan, supra note 21.

cooperation to deterrence as long as the agency does not demand too much compliance.[37]

The current federal system of monitoring to detect noncompliance activity relies heavily on self-monitoring and preannounced inspections of facilities. This system is much less sophisticated than the type of monitoring approach described above. For example, in the current system inspections are not targeted more frequently to regulated entities that have a history of noncompliance. Rather, inspection resources are used primarily to achieve breadth of coverage over the regulated community, with an emphasis placed on the potentially most harmful pollution sources. Under the current policy, regulated corporations are classified as major or minor dischargers according to the size and the potential environmental damage of their discharges. Inspections for major discharge facilities under the air and water programs are conducted at least once per year, while minor discharge facilities must be inspected once every two years.[38]

Viewed another way, however, the current EPA enforcement system has certain features akin to the general "cooperative" approach. For example, the agency often uses informal responses to detected violations such as notices of violations informing the corporation of violations and directing it to take corrective

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[37] Scholz, supra note 35.

[38] Wasserman, supra note 9, at 20.

action. Enforcement response is escalated to more formal responses (such as administrative orders and civil penalty sanctions) only if regulated entities do not respond to these earlier actions, or if the corporation has a history of noncompliance. Moreover, the current enforcement system focuses the majority of formal enforcement responses on the most significant violations. EPA maintains a Significant Noncompliers (SNC) list under each major program area, and gives first priority to responding with formal enforcement actions against these violators. Thus, the current system suggests that the agency tries to correct the violations of "good" corporations without imposing sanctions, while it actively seeks to punish "bad" corporations.

D. SUMMARY AND CONCLUSIONS

A surprisingly rich and voluminous body of literature highlights the advantages and disadvantages of different strategies for enforcing economic regulations. While not entirely in accord, several broad themes run throughout the literature that appear to have implications for the design of environmental enforcement systems. Several of these themes are briefly. reviewed below.

On the whole, the enforcement literature generally agrees that the principal motive underlying corporate noncompliance is the desire to avoid regulatory costs. This suggests that in theory enforcement programs can deter noncompliance behavior if monitoring efforts and enforcement response mechanisms are used

so that corporations are faced with expected sanctions for noncompliance that are equal to or greater than the expected benefits of noncompliance. Since environmental statutes and regulations have established specific levels of pollution control, these levels must be treated as optimal from an enforcement perspective. Thus, the primary objective of any environmental enforcement program is to secure and maintain the highest possible rate of compliance with existing statutory and regulatory requirements. This may be achieved by using monitoring efforts and enforcement responses in a manner that ensures that expected costs of noncompliance are equal to or greater than the expected benefits of noncompliance.

Economic theory suggests that the enforcement of civil statutes and regulations should rely on monetary fines as the primary deterrent mechanism. Monetary fines are advocated primarily because they are relatively easy to apply, serve to transfer wealth from violators to those who have been harmed by noncompliance activities, and also serve as a source of revenue for funding enforcement efforts. In practice, however, there are several constraints on the effectiveness of fines for deterring noncompliance behavior. A major limitation involves the scarcity of enforcement resources relative to the generally high cost of monitoring efforts designed to detect violations. In general, these two conditions translate into a relatively low probability that violations will be detected. Consequently, in order to achieve appropriate levels of expected penalties, the theory con-

cludes that monetary fines must be adjusted upward to compensate for the low probability of detection.

Historically, the level of individual civil penalty sanctions has been constrained by various institutional and procedural factors, including the reluctance of EPA to seek, and judges to impose, civil penalties that might result in the closure of businesses or that might entail deleterious secondary impacts to third parties. A further impediment to the effectiveness of monetary fines as a deterrent mechanism involves the potential divergence of corporate goals from the goals of corporate employees who ultimately are responsible for the compliance behavior of corporations. In certain cases this potential dichotomy could undermine the efficacy of monetary fines designed to influence the economic motivations of corporate entities.

The above factors may limit seriously the ability of EPA's enforcement program to promote deterrence primarily through the use of monetary penalties. This suggests that alternative types of enforcement approaches and responses might also be needed to ensure cost-effective environmental enforcement.

Two alternative approaches, the "legalistic" strategy and the "cooperative" strategy, are often cited as a means to improve the cost-effectiveness of environmental enforcement programs. At first glance these alternative strategies appear to be at odds with the basic theory underlying the economic enforcement approach: that noncompliance is chiefly the result of rational, economic considerations. However, these strategies can be viewed

as extending the simple economic deterrence theory to account for some of the practical constraints on the potential effectiveness of its policy prescriptions. For example, the legalistic strategy argues that enforcement systems must rely on a broad band of enforcement responses, including relatively severe sanctions such as permit revocations and criminal actions. Such severe sanctions potentially could raise the expected costs of noncompliance beyond that which simple monetary fines could achieve. In addition, this strategy advocates the use of criminal sanctions to affect positively the compliance motivations of individual corporate officers.

The "cooperative" enforcement strategy suggests that, through better targeting of enforcement resources, environmental enforcement programs could promote economic deterrence most cost-effectively. This approach advocates the use of relatively sophisticated monitoring systems that focus more monitoring efforts on those corporations with relatively poor compliance records. Essentially, this monitoring scheme attempts to take advantage of the potentially better compliance behavior of more risk-averse corporations in order to free enforcement resources to address corporations more likely to violate environmental laws and regulations.

In sum, the economic deterrence theory, as extended by behavioral enforcement theories, suggests that in order to promote deterrence in the most cost-effective manner, enforcement programs should include the following elements:

- An enforcement strategy that targets monitoring efforts at firms most likely to be in noncompliance; and
- The use of a broad base of enforcement tools and strategies, from administrative orders and civil penalties to more severe sanctions such as permit revocations and criminal actions against corporations and their officers.

The first element states simply that an enforcement strategy that targets monitoring efforts for corporations most likely to be in noncompliance can conserve enforcement resources and effectively detect violators. This may require a relatively sophisticated monitoring system that rewards with low monitoring corporations most often found to be in compliance and punishes with greater monitoring and penalties corporations with bad recent compliance records.[39] In theory, such a system could provide firms with incentives not to maximize short-term profits through noncompliance because of the long-term potential for increased monitoring and greater penalties.

The second element relates to the value of the potential sanctions that can be applied against noncomplying entities. Greater reliance on the more severe sanctions may be especially important because of the institutional and practical impediments to securing high civil penalties. These sanctions may be needed

[39] See Russell, Harrington & Vaughan, supra note 21.

to ensure that firms are faced with expected costs of noncompliance that exceed the expected benefits of noncompliance. Criminal actions against individuals also are important for affecting the cost-benefit calculus of corporate employees who ultimately are responsible for firm compliance behavior.

The remainder of this report focuses on examining selected EPA enforcement authorities. Specifically, in the following chapters we begin the process of identifying the optimal use of enforcement authorities by examining the potential cost-effectiveness of individual enforcement tools.

CHAPTER 3

FRAMEWORK FOR EVALUATING ENFORCEMENT AUTHORITIES

A. INTRODUCTION

In the previous chapter we outlined a model of corporate behavior in which compliance or noncompliance with the law is a rational decision based on a comparison of the benefits and expected costs of noncompliance. A "decision" in this sense encompasses a range of choices, willful or inadvertent, company-wide or individual; in any case, noncompliance produces private benefits that we assume the corporation is able to calculate. By contrast, the expected costs of noncompliance cannot be calculated readily because such costs depend on a number of contingencies. In formulating a cost/benefit equation for noncompliance, the corporation thus weighs the benefits of noncompliance against the expected costs of noncompliance. Because the expected costs of noncompliance are uncertain, there is a degree of risk attached to calculating them.

In meeting its enforcement mandate an agency such as EPA strives to obtain the highest possible degree of compliance (i.e., deterrence) within the regulated community given the constraints imposed by its limited resources. Within the agency various divisions compete for these resources, and each must make the best use of the funds and manpower allocated to it. The theories of compliance behavior discussed in Chapter 2 suggest that in order to achieve the highest level of compliance with

limited resources the agency should direct its enforcement efforts along two lines. First, it should target efforts against those in the regulated community least likely to comply. Second, it should examine the extent to which its enforcement program and authorities can affect the expected costs of noncompliance, and ascertain the level of resources needed to affect such costs. The first point concerns the agency's utilization of its monitoring resources and lies largely outside the scope of this report. This chapter addresses itself generally to the second point. Specifically, the purpose of this chapter is to develop a framework that can be used to assess EPA's enforcement authorities. Enforcement authorities include permits, civil penalties, orders, injunctions, criminal penalties and contractor listing.

B. THE CONCEPT OF COST-EFFECTIVE ENFORCEMENT

"Cost-effectiveness" is an economic criterion for evaluating the relative economic efficiencies of alternative policy strategies when either the policy objective, or the amount of resources available to maximize the policy objective, is fixed. In the enforcement context, for example, a specific rate of compliance may be the fixed variable. Then the most cost-effective enforcement strategy is the one that achieves this specific rate of compliance at the lowest possible cost to the enforcement agency. This may be the appropriate way to view cost-effectiveness in the enforcement context if the agency decides to make available sufficient enforcement resources to achieve some specific rate of

compliance. Alternatively, the amount of agency resources available for enforcement purposes may be a fixed, specified amount. In this case, the most cost-effective enforcement strategy is the one which creates the highest possible level of compliance (i.e., deterrence) within the regulated community given the available enforcement resources. As long as one of these policy variables is fixed, the problem for the enforcement agency -- creating a cost-effective program -- is the same.

As the first step in the development of such a program, the enforcement agency must determine the relative costs and benefits of its available enforcement authorities and their potential applications. In other words, before an agency can determine the optimal mix of tools to achieve program goals cost-effectively, it must scrutinize the potential deterrent benefits of each of its tools, as well as the potential agency resources needed to implement its tools.

Within the scope of this study, it is not possible to perform an empirical analysis of the relative costs and benefits of alternative EPA enforcement authorities. Nor is it possible to predict the compliance behavior of individual members of the regulated community when faced with various potential noncompliance sanctions because the utility derived from compliance or noncompliance is unique to each member. Moreover, we cannot conduct a comprehensive analysis of the enforcement program as a whole, because the study of certain components of the enforcement program (e.g., relationships among personnel, the organizational

aspects of the program) and interaction of these various components are extremely complex and elusive. Also, such an analysis would depend upon the program's history regarding how it has used its available tools. We can however, set up a framework for evaluating enforcement authorities by describing what we believe to be attributes of a-cost-effective enforcement program. These attributes relate to factors that can increase firms' expected costs of noncompliance (and thus increase potential deterrent benefits) and/or minimize agency costs. Because the attributes apply to enforcement authorities as well as the overall enforcement program, this paper will apply them to the enforcement authorities to evaluate their merits.

As discussed in Chapter 2, several components affect the expected costs of corporate noncompliance, and thus affect the behavior of members of the regulated corporate community:

1) the probability of detection;
2) the probability of an assignment of culpability;
3) the probability of a sanction or sanctions being imposed;[40] and
4) the value of the sanctions.

[40] We define "sanctions" broadly to include both direct and indirect economic losses resulting from opportunity costs, impairment of current business operations, fines, and civil penalties, as well as penalties that (at least on the surface) appear to have a non-economic dimension, such as jail terms and impairment of business or personal reputation.

These factors will determine the expected cost of the sanctions imposed on the corporation. In addition to these sanctions, the expected cost of noncompliance includes transaction costs incurred by corporations related to pursuing administrative or judicial action or defending themselves in administrative hearings or the court room. other things being equal, an increase in magnitude of any of these components will raise the expected costs of corporate noncompliance.

The components of corporations' expected cost of noncompliance can be altered both directly and indirectly by EPA's enforcement authorities. These authorities can affect one or more of the components of expected cost to varying degrees. By selecting enforcement authorities, or a mix of enforcement authorities, which minimize the level of resources required by the agency to carry out its enforcement mandate and increase corporations' costs of noncompliance, the agency can affect compliance behavior among all regulated firms. Thus, the design, use, and choice of enforcement authorities bears directly upon cost-effectiveness.

Based on our review of enforcement theories and litigative experience, we can derive several attributes which characterize cost-effective enforcement programs and authorities. In this report, each attribute is employed to examine how an enforcement authority can affect the expected cost of corporate noncompliance, the level of resources required by the agency to use the authority, or both. It should be noted that there is no attempt

to rank the attributes or compare the relative contribution of each to cost-effective enforcement. Depending upon the specific enforcement situation and the combination of attributes applicable, each attribute may prove a more or less important element in determining the advantages and disadvantages of a particular enforcement authority.

C. ATTRIBUTES OF COST-EFFECTIVE ENFORCEMENT

An enforcement program crafted with the aim of raising the expected cost of corporate noncompliance given the existing agency resource constraints should be comprised of authorities that embody as many of the following attributes as possible:

1. **Its range of sanctions should include penalties that can significantly effect the expected cost of noncompliance.**

If corporations determine whether to comply with laws and regulations by weighing the expected costs of noncompliance against the expected benefits, then effective deterrence requires that the perceived sanctions threatened by enforcement authorities be great enough to offset the probabilities of detection, conviction and imposition of sanctions, which are less than certain. The value of the potential sanctions attached to enforcement tools includes the possible indirect economic impacts that tools could impose, as well as the direct impacts such as monetary penalties or restrictions on firms' profit-making activities. The <u>potential</u> value of the sanctions associated with

enforcement authorities is of critical importance because it may have a considerable affect on firms' perception of the risks attached to noncompliant behavior. For a risk-adverse firm, the possibility of incurring severe sanctions presents a strong disincentive against noncompliance because of the heightened uncertainty surrounding its expected costs. This is true regardless of the actual probability of the sanction being imposed. Also of importance is whether the potential sanctions attached to enforcement authorities can affect the cost/benefit calculus of individual corporate managers as well as that of their firms.

2. **It should make the regulated community aware that the agency can conduct unpredictable or undisclosed monitoring and investigation.**

An enforcement program or authority that empowers the agency to conduct monitoring and investigation in an undisclosed or unpredictable manner increases the uncertainty of the agency's enforcement presence and makes a business aware of the agency's capability to detect violations. Thus, it may alter a firm's perception of the probability of detection, whether or not this perception is accurate. The expected cost of noncompliance may remain the same, but the attendant risk of detection has increased. In order to reduce or remove the risk, the members of the regulated community must comply with the laws and regulations at all times. Undisclosed and unpredictable investigations can increase the probability of detecting noncompliant behavior

in the aggregate by catching unaware a certain number of alleged violators. Its greater deterrent effect, however, lies in the perception of increased risk attached to non-compliant behavior.

3. **The elements of violation should be few, clear, and simple.**

An enforcement program or authority in which the elements of violation are few, clear and simple is likely to raise a corporation's expected cost of noncompliance and lower agency enforcement costs. First, it raises the probability of detection. Second, it raises the probability of conviction. A well-defined, bounded standard of violation will simplify the agency's monitoring and detection tasks and allow it to direct its monitoring resources more effectively. For violations that do occur, a clear standard of violation will limit the defenses available to offenders and increase the burden of asserting these defenses. It also will undermine claims of ignorance of, or confusion about, the standard. Agency transaction costs will be lowered because less time and fewer resources will be needed to establish the elements of a violation.

The attribute makes an additional contribution toward the cost-effectiveness of an enforcement authority: it reduces the number of inadvertent violations, assuming that the regulated community has been sufficiently informed and understands its legal responsibilities. This frees agency

resources that otherwise would be used to detect a wider range of possible violations to determine whether a violation had in fact occurred.

4. **It should allow the agency to act decisively without prior administrative or judicial hearing.**

A program or authority with this attribute raises the expected cost of noncompliance by allowing the agency to restrict, control and limit corporate activity pending review. If a firm cannot delay compliance during the time that it challenges an agency's action, or during the time that an agency takes to implement an enforcement action against it, then its expected costs of noncompliance will include any economic losses stemming from these actions. By permitting the agency's preemptive action, the attribute removes an important incentive of noncompliance -- during the period of review, a corporation cannot maintain the status quo while it delays compliance or challenges the agency.

5. **It should enable the agency to compel each member of the regulated community to compile and provide information.**

Assuming that the agency is able to specify the information it requires to support an enforcement action (e.g., analyzing data, drilling wells, conducting laboratory tests, compiling financial information), an enforcement tool and program embodying this attribute will reduce agency costs in obtaining that information and shift transaction costs from the agency to the alleged violator. In addition, if the

information can be used to support the agency's action, the corporation will have difficulty refuting the agency's allegations and the probability of an assignment of culpability will be increased. The costs of information collection borne by the corporation also may result in a more efficient allocation of costs because of the company's familiarity with its own operations.

6. **It should assure that disputed issues will be decided in a forum most deferential and familiar to the agency.**

To the extent that any choice is available, the cost-effectiveness of an enforcement authority or program is enhanced if the choice of a forum can be made by the agency rather than the alleged violator. Agency costs in pursuing individual cases will be lowered if the chosen forum is familiar to the agency and defers to its expertise. A practical knowledge of the forum allows the agency to streamline its case preparation based on its understanding of the forum's procedures and previously adjudicated cases; a replication of successful past actions may be more likely in such circumstances.

By the same token, an action brought in a familiar forum is likely to increase cost-effectiveness. A forum that has dealt with similar actions is likely to decide an issue expeditiously, thereby reducing transaction costs. The notion of a forum being familiar with agency actions and expertise suggests that the forum understands the nature of

the contest brought before it. Thus, the probability of assigning culpability, the probability that sanctions will be imposed, and/or the magnitude of sanctions may be increased. On the other hand, a forum that is not familiar with agency actions and expertise may place a greater burden on the agency in presenting its case against the regulated entity. There is also the possibility that a bias in favor of a corporation may exist in some fora, such as local courts. If the agency can select an alternative forum, the probability of an assignment of culpability will be increased.

7. **Any dispute, challenge or proceeding should be conducted "on the corporation's time."**

When an agency enforcement action is challenged by a corporation, the corporation may find its sphere of business activity circumscribed until the issue is resolved. In this sense, the dispute is said to be conducted "on the corporation's time," because the corporation bears the burden of the costs of noncompliance until the dispute, proceeding or challenge is resolved. During the period the issue is in dispute, the expected cost of noncompliance can be increased considerably because economic losses are incurred by the members of the regulated community. The corporation may incur economic losses because its current operations are restricted due to a pending enforcement action. There also may be opportunity costs related to planned operations,

e.g., the denial of permit modification. Regardless of the outcome of the dispute, these restrictions impose sanctions whose probability is absolute and whose magnitude is increased by the early time frame in which they occur.

The attribute thus reduces firms' economic incentives to litigate as well as to appeal or seek review. Consequently, this disincentive serves to reduce agency transaction costs connected with litigative action.[41]

8. **In any dispute, challenge or proceeding, the corporation should bear the burden of going forward with the evidence and the burden of persuasion.**

The allocation of the "burden of proof" to either the agency or the corporation can significantly affect the probability of an assignment of culpability.[42] This allocation is particularly important when issues of fact are not clear cut -- a common situation in environmental matters. The party assigned the burden of going forward carries the onus to refute or explain the agency's allegations, and the challenge will not progress unless it presents some credible evidence. The party assigned the burden of persuasion bears the onus to convince the trier of fact of all elements of

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[41] By suspending or otherwise impairing a corporation's operations, the agency may face future legal action brought against it by the corporation, thus incurring a risk of further costs. However, this risk may be offset to some degree by the firm's own cost/benefit calculations of engaging in an extended legal battle which would again be conducted on the firm's time.

[42] The government must bear the burden of proof in criminal cases.

his case, and he will lose unless he presents a "preponderance" of evidence supporting his position. Thus, when the corporation is assigned the burden of going forward and the burden of persuasion, the probability of conviction is marginally increased.

Another aspect of the attribute is its effect on the distribution of transaction costs. By shifting a greater share of responsibility to the member of the regulated community, it essentially shifts a greater portion of litigation costs as well. Costs of litigation for the agency are reduced since the burden of proof that it bears is lessened.

9. **It should give the agency great discretion in applying a tool with flexible, wide-ranging application, or combination of such tools.**

By permitting greater discretion in the choice of tools, an agency can increase the risk attached to the expected cost of noncompliance. An enforcement program that prescribes a narrow range of tools, and enforcement tools which have restricted application, aid the regulated community in weighing the benefits of noncompliance against the expected cost of noncompliance. Thus, if few enforcement alternatives are available to an agency, or if the alternatives are restricted and inflexible, corporations can estimate more easily the expected cost of noncompliance by assessing the probabilities and magnitudes of sanctions of each alternative based on past agency actions or other evidence. With greater discretion allowed the agency in its

choice and mix of flexible tools, estimating the expected cost of noncompliance becomes a more complex exercise with a broader range of possible outcomes. In addition, the probability of sanctions being imposed may increase if tools can be used in combination, since the likelihood of one or more tools actually resulting in sanctions is increased. These tools will be flexible instruments that do not contain application restrictions, and can be applied to a wide range of enforcement situations.

Greater discretion in the choice of tools also can affect the expected cost of noncompliance by allowing the agency to select a tool or tools that it perceives will cause the greatest increase in cost for a particular corporation. Although a case-by-case approach may not be a cost-effective use of agency resources, it may be appropriate in some instances and may increase the perceived risk of noncompliance among the regulated community.

D. ILLUSTRATION OF THE ATTRIBUTES OF COST-EFFECTIVE ENFORCEMENT -- THE BUSINESS LICENSE

In order to demonstrate the application of these cost-effective attributes, we have constructed a conceptual exercise. This exercise applies the attributes to a fictional enforcement authority -- a business license. We recognize that a broad-based business license (such as the one described here) does not exist presently, and may never exist. We do not advocate its creation,

but believe it is a useful theoretical creation to illustrate the attributes.

1. Scope

A license to do business would be issued to cover all of the manufacturing, fabricating, treating or other processes of a business which impact upon the environment or use regulated environmental resources such as the air, land or water. It potentially could be an extremely powerful enforcement tool because it would not be facility-specific or discharge-specific; it would cut across all the profit-making activities of a corporation. The broad scope of the business license would greatly increase the potential cost of noncompliance because a violation of environmental laws or regulations could lead to agency action that would result in a temporary cessation of business activities. Thus, a corporation regulated by such a license would be faced with severe penalties for violation, which would motivate scrupulous compliance behavior.

2. Characteristics of the License

In order to obtain a license, a corporate applicant would be required to demonstrate affirmatively that it could meet all environmental requirements, including statutory and regulatory requirements, and that it is not engaged currently in the violation of any environmental laws. During the licensing application process, the corporate applicant would be required to provide

sufficient technical, corporate, individual, and financial information to demonstrate that it can comply with all environmental laws and regulations for all processes at all facilities operated during the period of the license. If the corporate applicant meets the conditions for the granting of a license, it would be awarded a license authorizing it to conduct business for a finite period of time, such as two years. Among other requirements, the license would mandate recordkeeping, information gathering and documentation of environmental compliance. It would authorize the agency to conduct random inspections, and empower the agency to conduct monitoring at its discretion. The license would spell out, in simple, easily quantifiable terms, when the license conditions were violated. If an applicant could not demonstrate entitlement to a license, the agency will deny its application without a prior hearing.

The detailed information provided by the firm, coupled with the ability to conduct unpredictable or undisclosed monitoring and investigation, would aid the agency in detecting violations and increase the probability of detecting violations. Such information could help the agency target its monitoring efforts to the firm's most likely violations. It would reduce agency transaction costs by requiring the firm to shoulder the burden of information gathering. Violations would be easier to prove and harder for the licensee to challenge, because they would be based on information provided by the licensee. The agency's ability to

deny the license application without a prior hearing would force the applicant to challenge the denial on its time.

If the agency grants the license, the license would contain clear and concise requirements spelling out the licensee's responsibilities. The licensee thus will understand when the license would be violated, and the agency could mold its monitoring and detection efforts around the requirements. If the terms of the license were violated, the agency's transaction costs would be lowered because the agency need only expend few of its resources to determine whether a violation had occurred. Thus the agency could act decisively to address violations of the license, or challenges to the licensing procedure.

In any administrative or judicial proceeding, the agency's burden of proof would be clear and simple -- it would have to prove only that a violation of the license conditions existed. Moreover, any challenge regarding the license would be brought in an administrative hearing or other proceeding before a forum that would be deferential to the agency's expertise.

Furthermore, the license would include a provision requiring the licensee to post financial security with the agency or provide some financial assurance (e.g., a letter of credit, a bond). The financial assurance would serve two main purposes. First, if the firm became financially insolvent, it would protect health and the environment (and preserve agency resources) by making available to the agency a fund to be used to clean up or mitigate any environmental contamination resulting from a violation of the

license. Second, if a financially viable corporation refused to clean up or mitigate environmental contamination resulting from a violation of the license, the agency could access the fund to conduct the necessary environmental remediation. Thus, the costs of clean-up would be borne by the licensee, not the agency. Because the agency could access the financial security posted to assure compliance, neither bankruptcy, insolvency nor intransigence would serve as a shield against noncompliance. Litigation by the agency would be minimized, and would take place on the licensee's time.

The license would be subject to suspension or revocation if the agency determined that the licensee had violated any provision of the license. The clear and plain conditions contained in the license and the risks involved in noncompliance would motivate the licensee to comply with the conditions of the license. The licensee would realize that noncompliance could result in a suspension of the license and a potential loss of its ability to conduct business operations. Because the license suspension would be effective even during the pendency of administrative or judicial challenges to the suspension, challenges will be conducted on the licensee's time. The licensee would be encouraged to comply with the agency's corrective order so that the suspension would be lifted and it could resume normal business operations.

The agency would retain ultimate control over the fashioning of any preventive or remedial remedy. The power of the agency to

reject a license application and deny a license implicitly would give it the power to require the license applicant to meet the agency's licensing terms, including proposing of preventive measures and remedial actions satisfactory to the agency. The ability of the agency to deny the license also would give it substantial leverage to force the applicant to provide both the information and implement the preyentive mechanisms that the agency deems necessary. The agency's power to investigate the corporate applicant would be assured through a skillful scrutiny of the license application and carefully drafted license conditions.

The agency's ability to secure in the license the specific remedial and preventive measures it deems necessary for a strong environmental program would be maximized by virtue of the leverage achieved by threatening or actually suspending a license. As a practical matter, the agency could settle any disputed matter simply by agreeing to the licensee's proposal or the agency can suggest a remedial scheme which is more acceptable to it. Thus, the license would provide the agency great discretion in fashioning flexible, wide-ranging remedies. Used alone or in combination with other such tools, it could significantly raise the expected cost of noncompliance.

This illustrative enforcement tool is designed to embody all of the attributes of cost-effectiveness. It would operate to increase the expected costs of corporate noncompliance and reduce agency costs so that its use could control the environmental practices of an entire business with minimal agency resources.

The licensing power cuts across an entire corporate structure; because a license could be suspended or penalties could be imposed, or corrective action prescribed based on information collected by the licensee or undisclosed or unpredictable monitoring and investigation by the agency, a violation at one facility will threaten the continued operation of other facilities. Thus, a license violation could dramatically increase the expected costs of noncompliance, and licensees would be strongly motivated to comply with all environmental laws and regulations at all facilities.

In the next chapter we analyze some of the statutory provisions available to EPA under two laws, RCRA and the Clean Water Act and the regulations adopted by EPA to implement the enforcement provisions of these laws. In examining the authorities, we examine whether the authorities embody any or all of the nine attributes set forth above. We will begin the analysis by focusing on EPA's RCRA permit authority.

CHAPTER 4

ANALYSIS OF SELECTED ENFORCEMENT AUTHORITIES

A. INTRODUCTION

This Chapter uses the enforcement attributes presented in Chapter 3 to examine selected RCRA and the Clean Water Act enforcement authorities and their implementing regulations. First, we provide an overview of each statute, explaining in general terms its purpose, statutory scheme, regulatory schemes and enforcement authorities. Second, we select enforcement authorities and their implementing regulations for further analysis. The analysis is based upon the nine attributes of cost-effective enforcement, which are applied to the selected authorities.

B. THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976 (RCRA)

1. Overview of RCRA

The Resource, Conservation and Recovery Act of 1976 (RCRA) is designed to provide comprehensive federal regulation of hazardous waste. It is intended in part to ensure safe and effective treatment, storage and disposal of hazardous wastes, and sets up a complex regulatory program for tracking hazardous waste from "cradle to grave."[43] RCRA's coverage extends to all hazardous waste generated from current industrial operations and other

[43] See 40 C.F.R. Parts 260 through 268.

sources. It also contains provisions for regulation of non-hazardous "solid **waste."**[44]

RCRA divides into three major groups the universe of facilities which generate, store, dispose of, transport, or otherwise are involved with hazardous waste. These three groups are "generaters," "transporters" and owners or operators of facilities which "treat, store or dispose of" hazardous **waste.**[45] RCRA also establishes a regulatory program to control hazardous waste. The cornerstone of RCRA's regulatory scheme is its permit system.

RCRA does not require permits for generators of hazardous waste, or for transporters of hazardous waste, but does require permits for all facilities that treat, store or dispose of hazardous waste. These facilities, called "TSD facilities," must obtain operating permits. These permits contain conditions incorporating federal standards for operating methods, and techniques and practices which dictate and control virtually every aspect of a TSD facility's operation. The permit conditions also cover monitoring, inspection and reporting.

Along with the permit system, all TSD facilities, generators and transporters are required to participate in a manifest tracking system designed to ensure that all hazardous waste is accounted for and is disposed of at permitted TSD sites. EPA is

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[44] See 42 U.S.C. sections 6941-6950, commonly known as "Subtitle D."

[45] See 42 U.S.C. sections 6922-6924; see also 40 C.F.R. section 260.1(b), Parts 260 (App. A Figure 4), 262, 263, & 264.

provided with broad power to enforce the provisions of RCRA, including administrative order authority and the right to seek injunctive relief, civil penalties and criminal penalties.

2. RCRA Permits

a. Substantive Issues

1) Scope, Coverage and Issuance

RCRA sections 3004 and 3005 govern the issuance of permits for hazardous waste activities. RCRA apparently suggests that literal compliance with application requirements and operating standards require EPA to issue the permit, as it states that

> [u]pon a determination by the (EPA) Administrator . . . of compliance by a facility for which a permit is applied for under this section with the requirements of this section [permit requirements] and section [3004 -- standards for TSD facility owner/operators], the Administrator . . . shall issue a permit for such facilities.

Section 3005(c)(1) (emphasis added). EPA nevertheless maintains significant discretion in determining when an application demonstrates such compliance and what permit conditions should be imposed to obtain and maintain compliance.

The requirements of Sections 3004 and 3005 are complex and far-reaching. They range from the description of hazardous waste activity to be permitted (see RCRA section 3005(b)(1) and (2), 40 C.F.R. section 270.14(b)), to mandatory groundwater monitoring (see RCRA sections 3004(p), 3005(i), 40 C.F.R. sections 270.14(c), 264.97), to corrective action measures for continuing

releases of hazardous waste or hazardous constituents (see RCRA sections 3004(u), (v), 3005(i), 40 C.F.R. sections 270.14(c) (7), 264.100), to financial assurances for closure (RCRA section 3004(t), 40 C.F.R. sections 270.14(b) (15), 264.143) and post-closure (RCRA section 3004(t), 40 C.F.R. sections 270.14(b) (16), 264.145). Each discrete aspect of the permit application must be addressed to the Administrator's satisfaction before an application will be deemed "complete." 40 C.F.R. section 270.10(c). RCRA grants the Administrator great discretion to review permit applications and issue permits. It states that permits "shall contain such terms and conditions as the Administrator (or the State) determines necessary to protect human health and the environment." RCRA section 3005(c) (3); see also 40 C.F.R. section 270.32(b) (2).

RCRA requires an owner or operator of a TSD facility to obtain a permit. RCRA section 3005(a). Permits are required for all new TSD facilities, to continue operations at TSD facilities which were in existence on November 19, 1980, and, after January 26, 1983, to close TSD facilities. 40 C.F.R. section 270.1(c).[46] TSD facilities must be permitted throughout their

[46] RCRA section 3005(e) creates a class of "interim status" TSD facilities. In order to qualify for interim status, a TSD facility must have been in existence as of November 19, 1980, must have properly notified EPA as required by RCRA section 3010, and must have filed a short form application, known as a "Part A" application. In order to maintain interim status such facilities were required to submit detailed "Part B" applications and proof of financial assurance not later than November 8, 1985.

Interim status facilities must comply with the regulations set out in 40 C.F.R. Part 265 (which parallel the Part 264 TSD

active life, during closure, during post-closure (for facilities closing after January 26, 1983), and, for some operations, during corrective action. Id.; see also 40 C.F.R. sections 264.100-264.101.

EPA has provided by regulation that units of TSD facilities can be permitted without simultaneously permitting the entire facility. 40 C.F.R. section 270.1(c) (4). Thus, no one permit must address the entire TSD facility. Similarly, no discrete permit action (such as revocation or modification) will have a direct impact on the entire TSD facility. Id.

EPA's regulations interpreting the corrective action provisions of RCRA section 3004(u) allow permits to be issued containing only schedules of compliance rather than providing for cleanup prior to permitting. 40 C.F.R. sections 270.14(c) (7) and (8). Under the regulations, the applicant's submission of a plan to remedy releases into the environment, and EPA's final review and approval of the plan, can be postponed until after the TSD permit has been issued. There is a question whether this regulation is consistent with the underlying statutory provision, which implicitly requires that EPA have made the corrective action decision at the time of permit issuance and that what may be deferred is completion of the cleanup. RCRA section 3004(u). The schedule of compliance contained in the permit thus would

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regulations for permitted facilities), but are not governed by a formal, detailed permit, as are the TSD facilities. The discussion in this Chapter relates almost entirely to facilities permitted under RCRA section 3005(c), not interim status facilities.

simply call for implementation over time of an approved plan to remedy releases.

RCRA mandates that a permittee provide some evidence of financial responsibility in the permit application. The scope of this requirement is defined broadly in the statute to include "financial responsibility (including financial responsibility for corrective action) as may be necessary or desirable." RCRA section 3004 (a) (6). The implementing regulations are more limited; financial assurance only must be provided for closure and post-closure activities, and for such corrective action for past or current releases as is included in the permit. No financial assurance need be provided for possible releases occurring, or possible corrective action needed, during the life of the permit.

Under RCRA, one, or any combination, of the following can be used to satisfy the financial assurance requirements: insurance, guarantee, surety bond, letter of credit, or qualification as a self-insurer. RCRA section 3004(t) (1). The acceptable financial assurance mechanisms contained in RCRA regulations are slightly different and fall into three general categories: (1) a trust arrangement in which the trustee (not EPA) implements the required action upon the owner/operator's failure to do so (closure trust fund, surety bond guaranteeing payment into a trust fund); (2) a third party financial guarantee payable to EPA upon the owner/operator's failure to undertake the required action (surety bond guaranteeing performance, e.g. closure, letter of credit, insurance, corporate guarantee); or (3) a

financial test, wherein the owner/operator must certify that its tangible net worth and net working capital exceed six times the estimated costs of the required closure, post-closure and/or corrective action.

2) Modification and Renewal

TSD permits issued under RCRA section 3005 must be for a fixed term of not to exceed 10 years. RCRA section 3005(c) (3), 40 C.F.R. section 270.50(a). RCRA requires that permits for land disposal facilities shall be reviewed every five years and "shall be modified as necessary to assure that the facility continues to comply with the currently applicable requirements of this section [RCRA section 3005] and section 3004." RCRA section 3005(c) (3) (emphasis added). Read literally, this requires EPA to conduct a complete review of permitted land disposal facilities every five years, and to modify permit conditions to address, among other things, then current and appropriate groundwater monitoring, corrective action and financial responsibility conditions. The regulations reflect the mandatory nature of this statutory permit review and modification procedure for land disposal **facilities.**[47]

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[47] Under some circumstances, however, the regulations describing modification procedures may preclude full implementation of the statutory review provision. Permit modification can be implemented under the regulations only if "cause" exists. 40 C.F.R. section 270.41. "Cause," as defined in the regulations, includes the following:

1. material or substantial alterations or additions to the facility since permit issuance;

RCRA also grants EPA the discretionary authority to modify permits other than land disposal facility permits at any time, and to modify permits for land disposal facilities sooner than every five years. RCRA section 3005(c) (3). The regulatory standards for discretionary permit modifications are identical to those described above. See 40 C.F.R. section 270.41.

The regulatory limitations on the use of permit modification are especially significant when viewed in conjunction with the enforcement limitation provisions of 40 C.F.R. section 270.4(a).

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2. new information not available at the time of permit issuance;

3. standards or regulations on which permit based have been changed by statute or amended standards or regulations; or

4. a judicial decision modifying a regulation which the court has remanded and stayed the regulation, and other discrete regulatory requirements, such as

   - modification of a closure plan required under 40 C.F.R. Part 264; or
   - lessening of post-closure requirements - corrective action has not achieved compliance with groundwater protection within a reasonable time; or
   - adjustment (up or down) of financial responsibility.

Until recently, when regulatory changes were promulgated to meet statutory intent, a large proportion of the discrete "causes," including the amending of regulations and judicial decisions, were not applicable unless the permittee requested a modification, or the modifications were to the permittee's advantage in terms of less stringent requirements. On December 1, 1987, EPA revised the list of "causes" for modifying a permit to include changing standards and regulations. See 52 Fed. Reg. 45,788 (1987). There is nevertheless no statutory or regulatory provision that allows EPA to modify a permit in unanticipated or emergency circumstances.

Effective December 21, 1987, 40 C.F.R. section 270.4(a) states that:

> Compliance with an [sic] RCRA permit during its term constitutes compliance for purpose of enforcement, with Subtitle C of RCRA except for those requirements not included in the permit which become effective by statute, or which are promulgated under Part 268 of this chapter restricting the placement of hazardous wastes in or on the land.

Read together, these sections suggest that no enforcement action can be taken unless a permit condition has been violated. Since no permit condition may be changed unless one of the enumerated "causes" of 40 C.F.R. section 270.41 exists, the scope of permissible enforcement is directly limited by the completeness or inclusiveness of the permit. Cf. 40 C.F.R. section 270.32(b)(1) (permit conditions should encompass compliance with statutory requirements); 52 Fed. Reg. 45,793 (1987) (EPA claims that new statutory or regulatory requirements are self-implementing and enforceable regardless of specific permit conditions).

The permit modification regulations and permit renewal provisions work together to limit further EPA's full use of permits as an enforcement tool. In addition to specifying a limited term for permits under Subtitle C, RCRA requires EPA to "consider improvements in the state of control and measurement technology as well as changes in applicable regulations" before issuing a permit renewal. RCRA section 3005(c) (3). In other words, in order to continue operating, a permit renewal applicant must

demonstrate that its TSD facility meets all then-current regulatory requirements (including new requirements adopted since issuance of the original permit), and will operate in compliance with them from the date of permit renewal.

The regulations totally undercut the relatively broad authority granted in the statute. The regulations state that permit renewal applications may be denied under only three circumstances:

1. non-compliance with any condition of the existing permit;
2. misrepresentation or omission of relevant facts; or
3. determination that activity endangers human health or the environment and only can be regulated to acceptable levels by permit modification or termination.

40 C.F.R. section 270.43(a). There is no provision to deny directly a permit renewal application for non-conformance with newly adopted regulations. Cf. 52 Fed. Reg. 45,793 (1987) (EPA discusses its authority to modify permit conditions on the basis of new regulations, but makes no changes to the 40 C.F.R. section 270.43 standards for permit termination or denial of permit renewal). When considered with the limited "causes" for permit modification, the regulations continue to frustrate RCRA's intent to use the permit process as a continuing compliance tool and as a tool to upgrade TSD facilities.

3) suspension and Revocation

Revocation of a TSD permit is statutorily mandated whenever EPA determines that a permitted facility has not complied with the requirements of RCRA sections 3004 or 3005. RCRA section 3005(d). The regulations implementing this provision define the same limited bases for termination of a permit as for denial of a permit renewal application:

1. non-compliance with any condition of the permit;

2. misrepresentation or omission of relevant facts; or

3. permitted activity endangers human health or the environment and "can only be regulated to acceptable levels by permit modification or termination."

40 C.F.R. sections 270.43(a), 270.41(b).[48]

As with permit modifications and renewals, however, the regulatory provisions tie all future permit termination actions to the conditions included in the original permit, and thus to the environmental site conditions and regulatory environment in existence at the time of original permit issuance. This directly contradicts the mandatory nature of modification, termination and renewal denial specified in RCRA section 3005. Further, it pro-

[48] These regulations for termination of permits comport with the statutory mandate only if one assumes that the permit incorporates all the requirements of 3004 and 3005 and the regulations promulgated thereunder. Under this assumption, one could argue that a violation of the permit is by definition a violation of the statutory sections, thus incorporating the broad permit revocation authority provided by statute.

hibits full use of a TSD permit as envisioned in RCRA, as a tool to force owner/operators to incorporate new regulations into their operations and to clean up releases of hazardous waste at their facilities as a precondition to continued operation. In addition, the enforcement "shield" provided in 40 C.F.R. section 270.4(a), which states that compliance with a RCRA permit constitutes compliance with Subtitle C for purposes of enforcement, imposes constraints on the unilateral use of permit revocation as authorized by statute. It limits the scope of a permit revocation action to the terms of the permit, and conditions which are mandated by statute and 40 C.F.R. Part 268 requirements.[49]

Finally, RCRA arguably authorizes suspension or revocation under the RCRA section 7003 "imminent hazard section" by stating that the Administrator may, "after notice to the affected State, take other action under this section including, but not limited to, issuing such orders as may be necessary to protect human health and the environment." It is significant that, with the

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[49] RCRA also authorizes permit revocation or suspension through the administrative order vehicle. This may provide a broader basis for permit revocation than the unilateral revocation vehicle, but order issuance can involve a more complicated and time-consuming procedure. RCRA section 3008(a) compliance orders, which may include permit revocation or suspension, can be based on the violation of any part of Subtitle C, not only violations of Sections 3004 and 3005. Violation of a RCRA section 3008(a) order may in and of itself be a basis for suspension or revocation of a permit. See RCRA section 3008(c). A RCRA section 3008(h) corrective action order, which can be issued whenever there is a release of hazardous waste from an interim status facility, may include suspension or revocation of the facility's interim status. There are no regulations which directly address this statutory authorization.

exception of the power to suspend permits, these administrative order authorities essentially duplicate the unilateral permit revocation authority found in RCRA section 3005(d).

b. Procedural Issues

1) Issuance and Modification

RCRA does not specify any procedure which should apply to permit issuance, permit modification or to a challenge of permit conditions. In general, the procedural requirements of 40 C.F.R. Part 124 (consolidated permit regulations adopted under RCRA, the Clean Water Act, and other environmental statutes)[50] apply to such permit actions. The procedural requirements contained in Part 124 do not significantly affect EPA's substantive authority to impose statutorily required permit conditions, or conditions necessary to protect human health and the environment. They do, however, affect the speed and ease with which such conditions become effective and enforceable. The regulations create a bifurcated hearing procedure which can greatly delay effectiveness of permit conditions, and specify the burden of proof in the second level of hearings.

Part 124 requires that the public be given notice of all draft RCRA permits. 40 C.F.R. section 124.10. A public hearing

[50] It should be noted that although the Part 124 consolidated permit regulations are issued under the respective substantive statutes, they are designed to meet the requirements set out in the Administrative Procedure Act. See 48 Fed. Reg. 14,264 (1983).

(which must be tape-recorded or transcribed) must be held whenever there is a "significant degree of public interest in a draft permit," or at the Regional Administrator's discretion. 40 C.F.R. section 124.12(a) (1) and (a) (2). All challenges to permit conditions, including the applicant's, must be raised during this public comment period. 40 C.F.R. section 124.13. All written materials supporting the applicant's challenges must be submitted during this time for the administrative record. Id. Upon review of the information provided during the public comment period, EPA issues a "final permit decision." 40 C.F.R. section 124.15(a).

Before becoming final, EPA's "final permit decision" is subject to additional administrative review. If no challenges to the permit are filed within 30 days, and if the Administrator does not review sua sponte any permit condition, the RCRA permit is immediately effective. 40 C.F.R. sections 124.19(a), 124.19(b) & 124.15(b) (2). If a challenge is timely filed, the Administrator has the discretion to deny it summarily based on the challenger's failure to raise the issues during the public comment stage, or the lack of new factual information or legal or policy argument which would justify a change in the final permit decision. 40 C.F.R. section 124.19(c). The permit becomes immediately effective upon summary denial of an administrative challenge request. If review of an applicant's challenge to a permit condition is granted, the challenged condition is immediately stayed for judicial review and enforcement purposes, pending completion of the Administrator's review, but the permit

is otherwise in effect. 40 C.F.R. sections 124.16(a) & 124.15(b)(2).[51]

If administrative review of the "final permit decision" is granted, the Presiding Officer[52] has discretion to determine the extent and complexity of the hearing procedures. 40 C.F.R. section 124.85(b). At their most complex, the evidentiary hearings can be extremely time consuming, involving motions, pleadings for summary judgment, presentation of witnesses with the right of cross examination, submission of briefs, preparation of a recommended decision, opportunity for administrative appeal from the recommended decision, and issuance of a final decision including findings of fact and conclusions of law. See 40 C.F.R. section 124, Subpart E. If all possible hearing and review procedures are invoked by the permit applicant, an unpopular permit condition could go through 5 levels of review before becoming "final," i.e., effective for judicial review and enforcement purposes, or before being remanded by the Administrator to repeat

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[51] The regulations are somewhat unclear about the effectiveness of challenging permit conditions for a new facility. Forty C.F.R. section 124.16(a) (1) provides that a new facility will be deemed to, have no permit while its permit appeal is pending, although 40 C.F.R. section 124.60(a) (2) provides that the Presiding Officer may authorize operation while the appeal is pending.

[52] A Presiding Officer for evidentiary hearings for EPA issued NPDES Permits and EPA-terminated RCRA permits is "an Administrative Law Judge appointed under 4 U.S.C. section 3105 and designated to preside at the hearing." 40 C.F.R. section 124.72(b).

the entire review process.[53] Furthermore, if followed in practice, the regulations require that only issues raised during the public comment period can be reviewed in the subsequent levels. 40 C.F.R. sections 124.19(a) & 124.76. These levels include:

1. public comment period (40 C.F.R. section 124.11);
2. reopened public comment period (40 C.F.R. section 124.14);
3. initial administrative appeal (40 C.F.R. section 124.19);
4. interlocutory appeal to Administrator (40 C.F.R. section 124.90);
5. petition for review of Presiding Officer's initial decision (40 C.F.R. section 124.91);
6. possibility of remand by Administrator (40 C.F.R. section 124.91(f));
7. repeat entire process (40 C.F.R. section 124.91(f) (3)).

The regulatory review scheme set forth at 40 C.F.R. Part 124, Subpart F is an attempt to streamline the above requirements for RCRA permits by granting the Administrator the option of substituting non-adversary panel procedures in lieu of the public hearing on draft permits. Using this alternate process, a more

[53] Compare this procedure to the requirements of the Administrative Procedure Act (APA). APA requires an agency to provide a hearing for the applicant to present its views "within a reasonable time" before making an initial decision on a permit application. The decision will be made based on the record which includes the hearing. 5 U.S.C. sections 558(c) & 556. An administrative appeal also is required, although the requirements can be simplified or omitted for applications for initial licenses, if the agency "finds on the record that due and timely execution of its functions imperatively and unavoidably so requires." 5 U.S.C. section 557(b) (2).

formal hearing is held directly after public notice of the draft permit. A recommended decision issued following the non-adversary panel hearing is still subject to administrative appeal to the Administrator. Thus, the only steps which are eliminated using the Subpart F process are the first step after issuance of a draft permit, namely public hearing (if one is requested), issuance by the permit drafters of a "final permit decision," and the petition for review by the applicant or third parties.

The 40 C.F.R. Part 124 regulations do not clearly specify which party bears the burden of proof for justifying challenged permit conditions. The regulations impose the burden of persuasion for issuance of a permit (as opposed to permit denial) on the applicant.[54] The regulations state, however, that "[i]n many cases the documents contained in the administrative record, in particular the fact sheet or statement of basis and the response to comments, should adequately discharge this burden." Id. The regulations go on to allocate the burden of going forward by assigning EPA the initial burden of presenting an affirmative case in support of any challenged condition, and imposing upon the applicant the burden of going forward thereafter to challenge the condition. 40 C.F.R. sections 124.85(a) (2) & (3).

After the final permit is issued, it is subject to judicial review. 5 U.S.C. section 705. Such review is normally limited

[54] 40 C.F.R. section 124.85(a) (1).

to issues raised at the administrative level.[55] The permit and its conditions remain enforceable unless the court grants a stay, based on the public interest, success on the merits, and irreparable harm test used for injunctive relief.[56]

2) Suspension and Revocation

RCRA is silent on what procedures, if any, must be followed to invoke the unilateral permit revocation authority of RCRA section 3005(d).[57] The regulations nevertheless impose upon the agency the cumbersome 40 C.F.R. Part 124, Subpart E requirements if it attempts to revoke a permit. 40 C.F.R. section 270.43(b). Thus, before a permit can be revoked, a full evidentiary hearing must be held before an Administrative Law Judge, who must then prepare an initial decision, which itself is subject to additional administrative appeal before becoming effective. The RCRA regulatory scheme does not contain provisions for immediate permit revocation, regardless of the circumstances.

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[55] 5 U.S.C. section 706(2) (F); see, e.g., Camp v. Pitts, 411 U.S. 138, 142, 93 S. Ct. 1241, 1244 (1973) ("the focal point for judicial review should be the administrative record"); American Iron & Steel Inst., 568 F.2d 284, 296 (3d Cir. 1977) ("The touchstone of [court] review, both as to the Agency's consideration of the issues and the factual predicates of this administration must be the adminstrative record.")

[56] 5 U.S.C. section 706; see, e.g., Virginia Petroleum Jobbers v. Federal Power Comm'n, 259 F.2d 921 (D.C. Cir. 1958).

[57] Compare to RCRA section 3008(b), in which the Congress specified that no section 3008 order could be final without a hearing.

In contrast to the Part 124 regulations (which are intended to accommodate the APA requirements), the APA does not contain complicated procedural prerequisites to license revocation:

> Except in cases of willfulness or those in which public health, interest, or safety requires otherwise, the withdrawal, suspension, revocation, or annulment of a license is lawful only if, before the institution of agency proceedings therefor, the licensee has been given -- (1) notice by the agency in writing of the facts or conduct which may warrant the action; and (2) opportunity to demonstrate or achieve compliance with all lawful requirements.

5 U.S.C. section 558(c). This language has been interpreted by the courts as allowing the immediate suspension of a license without notice or evidentiary hearing in cases where conduct warranting suspension or revocation was willful, grossly negligent or inimical to the public interest.[58]

The evidentiary hearing procedures mandated in Part 124 are more complex and restrictive than the APA statutory requirements. The case law interpreting APA section 558(c) reflects that the "second chance" provided for by statute can be implemented on a case-by-case basis, weighing the government's interests in protecting the public interest against the licensee's property interest, if any, in the license. Thus, a warning letter and an opportunity for an informal meeting with agency officials was

[58] See, e.g., Cargill, Inc. v. Hardin, 452 F.2d 1154, 1173 (8th Cir. 1971), cert. denied, 406 U.S. 932, 92 S. Ct. 1770 (1972) (proceeding not void for lack of notice where petitioner's acts were willful).

deemed adequate to satisfy the APA in an action suspending customs brokers' permits.[59]

The Part 124 regulations do not discuss the appropriate burden of proof in a permit revocation or suspension proceeding. The APA provides that "[e]xcept as otherwise provided by statute, the proponent of a rule or order has the burden of proof." 5 U.S.C. section 556(d).

c. Analysis of RCRA Permits

The vast majority of entities subject to regulation under RCRA -- the generators and the transporters of hazardous waste -- are not required to secure a permit. Only TSD facilities require RCRA permits. Thus, only a fraction of the entities within the RCRA universe are subject to this potentially powerful federal enforcement tool.

Because generators and transporters are not subject to permitting, EPA lacks a powerful enforcement authority over the manner in which the generators and transporters operate. The RCRA regulations do require generators to prepare a hazardous waste manifest, which transporters must carry with the hazardous waste to its ultimate point of disposal. Transporters are also required to complete a portion of the manifest (and retain a copy of it), and TSD facilities must sign, complete and return the manifest to the generator.

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[59] Gallagher & Ascher Co. v. Simon, 687 F.2d 1067, 1075-76 & n.11 (7th Cir. 1982).

The manifest tracking system creates an incentive for generators and transporters to properly manage hazardous waste. Although it is a useful information gathering tool, it does not embody most of the attributes of enforcement set forth in Chapter 3. The manifest tracking system does not dramatically raise the expected costs of noncompliance; it cannot be used to impose operating conditions on generators and transporters; and violations must be pursued on the agency's time.

Congress gave EPA the permitting power as an enforcement tool only for the regulation of treatment, storage and disposal activities. Unfortunately, Congressional crafting of the tool does not embody all of the attributes of cost-effective enforcement. The permit is an effective information gathering authority and can be drafted so that the elements of violation are few, clear and simple. Also, a permit may contain provisions allowing the agency to conduct undisclosed and unannounced monitoring and inspection. However, the sanctions imposed by the permitting authority cannot be used to dramatically increase the cost of noncompliance. RCRA requires a review of permit conditions, and hence permit renewal, only once every ten years (and once every five years for "land disposal" facilities). It authorizes EPA to modify the permit "as necessary to assure that the facility continues to comply" with law, and affirmatively provides that nothing is to "preclude the Administrator from reviewing and modifying a permit at any point during its term." These statutory

provisions merely echo the power inherent in the permitting tool. They do not enhance its effectiveness.

Furthermore, EPA's implementing regulations do not embody two very important attributes of cost-effectiveness. In its permit issuance, denial, revocation, modification and suspension regulations, the agency has effectively abandoned the opportunity to shift the burden of proof and burden of going forward to the permittee or permit applicant. The regulations require that the agency must assume the burden of persuasion and burden of going forward each and every time the agency seeks to modify the RCRA permit during the ten year permit period. The RCRA permittee need not undertake the burden of demonstrating that it has not violated the law in the past and that it will comply with all existing regulations in the future. These presumptions weigh in its favor, and the agency must refute them. Moreover, during any administrative challenge to a permit modification requested by the agency, EPA will be required to devote significant resources to demonstrating the propriety of the modification. During this time, the permittee will continue to enjoy the benefit of the unmodified permit; challenges, proceedings and hearings are conducted on the agency's time.

In the event of a violation of the law or regulation, or a permit violation, the agency must assume the burden of going forward and burden of persuasion on any suspension or revocation of the permit. In spite of the suspension or revocation hearing,

the violator knows that he can operate until the permit is suspended or revoked. The violator remains under the protection of the permit and the permit becomes virtually a "shield" against enforcement rather than a tool for enforcement.

RCRA requires that the permittee demonstrate financial responsibility "as may be necessary or desirable." The intent of this statutory requirement is fairly clear; when the facility closes, or in the event of a release of hazardous waste, or hazardous constituents from the TSD facility, EPA will be assured that the facility has the financial wherewithal to remediate the resulting environmental damage and protect the environment.

Unfortunately, EPA's regulations weaken the power of the permit as a vehicle for giving EPA access to funds when needed. The regulations allow the permittee to demonstrate financial responsibility by a financial test keyed to the permittee's net worth. Most large TSD facilities comply with the financial requirement by meeting the financial test. Thus, EPA must institute affirmative action to recover funds to be used for remediation from a TSD facility. Even a solvent violator may prolong the litigation and refrain from forfeiting funds to the agency for a long while. Delay and litigation is encouraged and litigation is conducted on the agency's time.

Because a facility's financial situation may change, a violator who has satisfied the financial responsibility requirements using the financial test may become insolvent or bankrupt during its operation and/or ownership of the TSD facility. Thus, EPA

may be unable to procure funds to redress the long-term injury which has been created by the TSD operation. Obviously, the regulations which allow businesses to meet the financial assurance requirements of RCRA through the financial test may deprive the agency of the ability to access funds which have been posted to guarantee protection of the environment.

EPA has further diminished its permitting power by adopting regulations which allow division of a TSD facility into units. This regulation allows unit-by-unit permitting; it fractures the permit process. If the agency were to issue only one permit for the entire facility, it would clearly be authorized -- if not required -- to deny the permit in the absence of a comprehensive plan which addresses all the units of the facility. In a unit-by-unit permitting scheme, the power to assure comprehensive facility-wide compliance is lost. Additionally, it is difficult, if not impossible, to address interstitial problems which arise.

The mere threat of permit denial will not compel good environmental management practices at all the units at the site. Moreover, by narrowing the impact of a permit suspension or revocation to a single unit, EPA minimizes the potential deterrent power of the TSD permit. Instead of potentially closing down an entire TSD operation, a violation at a unit threatens only the suspension or revocation of the permit for that unit.

An even more obvious example of a weakening of its own enforcement authority occurred when EPA adopted regulations limiting its own authority to withhold or deny a permit to an

applicant who failed to propose corrective action at a solid waste management unit which is releasing hazardous constituents. By regulation, EPA allows the permittee to demonstrate entitlement to a permit without being required to provide a proposal and schedule to remediate the effects of the unpermitted release.

In fact, if EPA requires corrective action at a TSD facility, under its current scheme it has lost its leverage to require the corrective action under the permit. In order to force a permittee to undertake corrective action, EPA essentially must use its order authority and litigate on its own time to seek remedial action.

The RCRA TSD permit as designed by Congress contradicts many of the principles embodied in the attributes of cost-effectiveness. As implemented by EPA's regulations, it is weakened further as an enforcement authority. EPA's regulations impede the agency's ability to use the permit application process as a vehicle for securing information from the permittee and therefore requires more affirmative use of agency investigative resources; it does not create a strong disincentive to litigate or provide punishments which are strong enough to deter violations. The opportunity to litigate on the violator's time has been effectively waived by the agency, and the agency bears the burdens of proof in actions to suspend, modify, revoke or deny a permit.

3. RCRA Civil Penalties

a. Description

Under Section 3008(a) of RCRA, EPA has the authority to obtain civil penalties for RCRA violations either through administrative order or through filing a civil suit in federal district court against the violator. The penalty for a violation is authorized up to a maximum of $25,000 for each day of continued violation. EPA also has authority to seek an equal penalty for violation of a final order issued under section 3008(h). EPA also may obtain penalties of up to $5,000/day for violation of section 3013 and 7003 orders; these penalties, however, are obtainable only through civil suit in federal district court and not via the administrative process.

If EPA seeks penalties via the administrative process, the alleged violator may request a hearing before an administrative law judge. The agency bears the burden of going forward and the burden of persuasion in the hearing. The penalty is not final until the administrative law judge has issued a decision. The company may request a further administrative appeal before the chief administrative judge (acting for the **Administrator).**[60] Review of the decision of the chief administrative judge is in the federal District Court -- either in the District of Columbia, or in the district where the violation occurred, at the company's

[60] These procedures are set forth at 40 C.F.R. Part 22.

option. If the administrative law judge initially rules against EPA's enforcement, EPA may appeal to the chief administrative judge. EPA cannot appeal to federal district court.

If EPA seeks penalties via the judicial process, it must file suit against the violator in the district where the violation occurred or where the company has its principal place of business. Because EPA does not directly handle its own representation in court cases, the action must be filed by the United States Attorney for the district in which the action is to be brought, or by the United States Department of Justice. EPA must pursue a review and referral process to persuade the United States Attorney and/or Department of Justice to take the case.

As a matter of policy, EPA has established a civil penalty matrix to be used in calculating the penalties to be sought: the 1984 Civil Penalty Policy.[61] The penalty policy requires the agency to determine the seriousness of the violation (based on the potential for harm to the environment and the extent of deviation from statutory and regulatory requirements). The policy also authorizes upward or downward adjustments of the base penalty amount, based upon good faith, degree of willfulness or negligence, and history of noncompliance. The policy also provides for an upward adjustment to the penalty to capture any

[61] Environmental Protection Agency, RCRA Civil Penalty Policy (May 8, 1984), reprinted in Envtl. L. Rep. Admin. Materials (Envtl. L. Inst.) 35089.

economic benefit that might have accrued to the violator as a result of the failure to comply.

EPA has specified that civil penalties are the preferred method of enforcement under its RCRA Enforcement Response Policy (ERP).[62] The ERP is used to measure both regional and state enforcement under RCRA.

b. Analysis of RCRA Civil Penalties

As crafted by the Congress, RCRA civil penalties embody at least one very important attribute; they potentially can increase the expected costs of noncompliance dramatically. Assessing a civil penalty in which each day is a continuing violation of a maximum of $25,000 can effectively deter noncompliance. Penalties can be assessed administratively; thus EPA can bring penalty actions in a familiar and deferential forum.

Unfortunately, EPA's use of RCRA civil penalties satisfies few of the attributes of cost-effective enforcement. While the violation is at issue, the violator bears no costs of noncompliance. Indeed, when an administrative hearing is requested, the penalty often does not become final until years after the violation. Thus, the agency cannot act decisively against the violator. And the daily penalty feature has not been used by EPA in most of its enforcement calculations under the penalty policy.

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[62] Environmental Protection Agency, RCRA Enforcement Response Policy (Dec. 1987), reprinted in Envtl. L. Rep. Admin. Materials (Envtl. L. Inst.) 35161.

Also, litigation occurs "on the agency's time." EPA bears the burdens of going forward and of persuasion.

Although the initial choice of where to bring an administrative action lies with EPA, the violator may choose the court in which to appeal an adverse administrative decision. The EPA enforcement counsel may not appeal an adverse administrative decision beyond the first level. In some states, in contrast, an adverse decision by the hearing officer or board may be appealed by state enforcement counsel.[63]

The elements of violation may or may not be "few, clear and simple;" this varies significantly under RCRA.

The strong institutional preference for civil penalties as the preferred enforcement response has lead the agency to confine its exercise of discretion. By prescribing a set of factors upon which penalties will be calculated, the agency has provided the regulated community with a well-settled equation for comparing the expected costs of noncompliance with the benefits of noncompliance. The penalty policy removes the agency's ability to use the penalty sanction to dramatically increase the costs of noncompliance.

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[63] See, e.g., 71 Pa. Cons. Stat. section 510-21A.

C. THE FEDERAL WATER POLLUTION CONTROL ACT (the Clean Water Act or CWA)

1. Overview of CWA

The Federal Water Pollution Control Act, 33 U.S.C. sections 1251-1376, also known as the Clean Water Act or the CWA, is the federal government's primary tool for controlling water pollution.[64] The Clean Water Act ("the Act") is divided into six titles, which include a construction grant program and various research and assistance projects for selected pollution problems. This report generally addresses the provisions of the Act contained in Titles III and IV. Title III establishes "effluent limitations," and prohibits discharge of any point-source pollutant without a permit. CWA section 301. Title III also contains provisions regarding enforcement of the CWA. CWA section 309. Among other things, title IV establishes a comprehensive permit system, the National Pollutant Discharge Elimination Sys-

[64] Other laws, such as the Safe Drinking Water Act, 42 U.S.C. sections 300f - 300j-11, also are aimed at regulating water pollution. The Safe Drinking Water Act was enacted to control harmful contaminants in tap water and to protect underground sources of drinking water from the potentially deleterious effects of underground injection. It protects water through a series of national standards, the application of which are largely confined to public and/or residential water supplies. The Act mandates a permitting scheme for regulating underground injection wells. See *generally* Environmental Law Reporter, Clean Water Deskbook 455 (1988) (providing a complete analysis of both the Clean Water Act and the Safe Drinking Water Act).

tem (NPDES), for "point sources" of pollution.[65] CWA section 402. The NPDES system is core of the Clean Water Act.[66]

NPDES permits incorporate a variety of "technology-based" and "water quality-based" effluent standards.[67] If permittees do not meet the levels of effluent standards set out in their permits, they may be subject to permit termination or administrative, civil and criminal penalties. CWA sections 301, 302, 306, 307 & 309. EPA issues and enforces the permits unless a state is delegated that responsibility, subject to minimum substantive and enforcement requirements found in the Act or promulgated by regulation. CWA section 402(b). Thirty-nine states and territories currently administer NPDES permit programs.[68]

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[65] A "point source" is "any discernible, confined and discrete conveyance, including . . . any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, [or] container." CWA section 502 (14).

The Act's prohibition against water pollution is extremely comprehensive. It reads "[e]xcept in compliance with this section and [CWA sections] 302, 306, 307, 318, 402 and 404 . . ., the discharge of any pollutant by any person shall be unlawful." CWA section 301(a). There are several sources of pollution identified in the Act. In this report, we discuss only one of these types of point sources.

[66] Environmental Law Reporter, Clean Water Deskbook, supra note 64, at 5.

[67] Id. at 5-6.

[68] 52 Fed. Reg. 45,823, 45,824 (1987).

2. NPDES Permits

a. Substantive Issues

1) Scope, Coverage, and Issuance

Any discharge of pollutants from a "point source" into navigable waters is prohibited without a permit, which "may" be issued by EPA (or a state). This language does not require EPA to issue a permit to an applicant who has met all statutory requirements for a permit; it appears to establish discharge as a privilege within EPA's discretion to grant or deny.

The Act requires a permit to incorporate applicable effluent standards developed under sections 301, 302, 306 and 307. These standards are the major features of the permit system, and the permit system is the primary means of detecting violations of the Act and its implementing regulations, and of enforcing the standards embodied in the Act and regulations. The standards include:

1) effluent limitations based on the use of a particular technology to control discharges, which include Best Available Technology (BAT), Best Practicable Technology (BPT) or Best Conventional Technology (BCT) "as defined by the Administrator" (CWA section 301);

2) effluent limitations which "in the judgment of the Administrator . . . can reasonably be expected to contribute to the attainment or maintenance of . . . water quality" as will "assure protection of public health, public water supplies, agricultural and industrial uses, and . . . shellfish, fish and wildlife" (CWA section 302);

3) standards for certain categories of sources of discharge, developed according to what the Administrator "determines to be achievable" (CWA section 306); and

4) special toxic effluent standards as proposed by the Administrator "in his discretion" and pretreatment standards for pollutants discharged into publicly owned treatment works (POTW) (CWA section 307).

All these authorities place the ultimate standard setting power within the agency's discretion, suggesting that any challenge to a standard must overcome the usual judicial deference to agency decisions and meet the more difficult "arbitrary and capricious" standard required to prove abuse of discretion.

However, agency discretion is tempered by some of the statutory provisions. EPA must consider specified factors and consult with appropriate agencies when developing section 301 effluent limits. CWA section 304(b). Effluent limits under section 302 must "reasonably be expected to contribute to the attainment or maintenance of . . . water quality." CWA section 302(a). Also, categorical source standards established pursuant to section 306 must consider "the cost of achieving such effluent reduction, and any non-water quality environmental impact and energy requirements." CWA section 306(b)(1)(B). Development of toxic effluent standards under section 307 must include consideration of specified factors as well as elaborate notice and hearing procedures. Finally, when promulgating pre-treatment regulations for discharges to POTWs, EPA must designate the category or categories of sources to which the pretreatment regulations apply. CWA section 307(b)(3).

These objective statutory requirements may make significant inroads into EPA's standard setting discretion. If its standards

are challenged, EPA may bear the burden of proving that it adequately considered the prescribed factors or followed the applicable procedures. under section 302 it may have the burden of showing its decision was reasonable. The requirement to consider the cost of achieving effluent reductions for categorical discharge limits (section 306) may change the standard of judicial review from an "arbitrary and capricious" standard to a de novo review based on the court's "reasonable" judgment of the balance between the benefits of compliance and the compliance costs.

Along with incorporating effluent and water quality standards, NPDES permits also have other minimum statutory requirements under section 402(b), including:

1. Permits may not exceed five years in duration;

2. Permits must be subject to termination or modification for cause, including, but not limited to:

   a) violation of any condition of a permit;
   b) obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; or
   c) change in any condition requiring either a temporary or permanent reduction or elimination of the permitted discharge;

3. Permittees must agree to certain specified inspection, monitoring, entry and information requirements mandated by section 308;

4. The permit application process must provide to the public and affected states, and to EPA in the case of a state program, notice and opportunity to be heard; and

5. Any permit for a discharge to a POTW must include a program to insure compliance with the pretreatment standards.

EPA also can create permit conditions, including information gathering and data collection requirements, which extend beyond the statutory requirements as it "deems appropriate." CWA section 402(a)(2).

Aside from the generic program requirements described above, there appear to be no statutory limits to EPA's discretion to set individualized permit conditions. EPA imposes numerous generic permit conditions under 40 C.F.R. section 122.41, including a duty to reapply, duty to mitigate violations, duty of proper operation and maintenance of the facility, monitoring and reporting requirements, and a signatory requirement on all applications, reports or information submitted by the permittee to EPA.

The information generated by EPA's monitoring and reporting requirements is particularly useful in enforcement actions. Pursuant to the regulations, a permittee is required to sample and monitor its discharge according to EPA-specified testing procedures and report the results regularly to EPA in a Discharge Monitoring Report (DMR). 40 C.F.R. sections 122.41(j)(4) & 122.41(1)(4). Permittees also must provide access to the facility to EPA for inspections, but self-reporting by permittees conserves agency resources. 40 C.F.R. section 122.41(i). Also, since the permittee provides the discharge data, DMRs showing discharges in violation of permit conditions may constitute an admission and establish a prima facie case in an administrative or judicial forum. Many courts have accepted DMRs as the basis

for granting a motion for partial summary judgment on liability in a Clean Water Act citizen suit.[69]

The NPDES permit program regulations are set forth at 40 C.F.R. section 122. There are no prescribed situations in which EPA must issue a permit. The regulations provide that permits may not be issued in several situations, most importantly when effluent limits cannot be met, when high-level radioactive waste would be discharged, or when navigation would be impaired. 40 C.F.R. section 122.4. Additionally, permits for construction or operation of facilities which may discharge pollutants into navigable waters may not be issued unless the state in which the discharge will occur certifies that all applicable effluent and water quality standards can be met. CWA section 401(a)(1), 40 C.F.R. section 124.53(a). There is no "permit bar" for applicants with a history of violations of the Clean Water Act or other environmental laws. A permit bar clearly appears to be within EPA's discretion; the agency has already established by regulation certain situations in which it will not issue a permit. 40 C.F.R. section 122.4.

Other regulations instruct EPA to deny incomplete applications (40 C.F.R. section 122.21(e)), and imply that EPA can deny applications not timely filed (40 C.F.R. section 122.21(c)(1)) or without proper signature (40 C.F.R. section 122.22). Thus, EPA's

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[69] See, e.g., Sierra Club v. Simkins Indus., 617 F. Supp. 1120 (D. Md. 1985), aff'd, 847 F.2d 1109 (4th Cir. 1988). See generally J. Miller, Citizen Suits: Private Enforcement of Federal Pollution Control Laws 132 & n.1 (1987).

NPDES regulations preserve the broad, discretionary authority granted by statute to deny permits.

2) Modification, Transfer, and Renewal

Forty C.F.R. sections 122 (Subpart B) and 122.41(f) govern the circumstances in which NPDES permits may be transferred, modified or revoked and reissued. Transfer to a new owner may be effected automatically with proper notice to EPA and a written agreement between current and proposed owners stating "a specific date for transfer of permit responsibility, coverage, and liability between them." 40 C.F.R. section 122.61(2). This procedure places the burden on EPA to act in order to stop the transfer.

Modification of a permit by EPA is discretionary. It can be based on "any information" received by EPA if cause exists, or by request of the permittee. 40 C.F.R. section 122.62. Cause is defined to include:

1. alterations at the facility which justify permit changes;
2. new information not available at time of issuance of the permit;
3. standards or regulations on which the permit was based have changed;
4. change in a compliance schedule due to an Act of God, strike, flood, materials shortage or other event "over which the permittee has little or no control and for which there is no reasonably available remedy";

and sixteen other causes. 40 C.F.R. section 122.62.

Additional causes are prescribed in CWA section 402(b)(1)(c), including violation of any permit condition or obtaining a permit by misrepresentation. An expedited procedure for minor modifications is provided in 40 C.F.R. section 122.63. The regulations do not explicitly require immediate permit modification for "cause," but CWA section 402(a)(2) arguably mandates such modification by requiring EPA to prescribe permit conditions to assure compliance with Clean Water Act effluent and water quality standards. While EPA has discretion to modify permits for cause, EPA must modify or revoke and reissue a permit to incorporate more stringent toxic effluent standards or prohibitions promulgated under CWA section 307(a). 40 C.F.R. sections 122.62(b) & 122.44(b).

The Clean Water Act also provides that compliance with a permit is deemed compliance with the Act's effluent and water quality standards. CWA section 402(k). The juxtaposition of the discretionary "modification for cause" and CWA section 402(k) raises an important issue; in the event that standards are made more stringent, if EPA does not require updating of permits (other than for section 307 toxic effluent standards), permittees can use their permits as a "shield" against enforcement of the new standards against them.

The regulations promulgated pursuant to the Clean Water Act allow for permittees to request "variances" from effluent and

water quality requirements for a variety of reasons. [70] A variance from CWA section 301 standards is allowed if a lower effluent reduction is the best that the owner can achieve economically and "reasonable progress" toward the elimination of discharge will still result. CWA section 301(c). Variances are also allowed for non-conventional pollutants (CWA section 301(g)), discharges from a POTW (CWA section 301(h)), innovative production processes (CWA section 301(k)), biochemical oxygen demand and pH standards when "the energy and environmental costs of meeting such requirements . . . exceed by an unreasonable amount the benefits" (CWA section 301(m)), "fundamentally different factors" (CWA section 301(n)), and coal remining operations (CWA section 301(p)). Variances from CWA section 302 standards (other than toxics) may be allowed if meeting the standards would involve "no reasonable relationship between the economic and social costs and the benefits to be obtained," or if the modified standard "will represent the maximum degree of control within the economic capability of the owner" and "reasonable progress" will be made toward the normal water quality standards. CWA section 302(b)(2). Variances from CWA section 307 standards are available for "innovative pretreatment facilities," CWA section 307(e), and variances from thermal pollution standards are authorized under CWA section 316(a) if standards are "more strin-

[70] Forty C.F.R. section 124.62 lists the "variances" which may be requested. The regulations define the term "variance" to include the "modifications" listed in the Clean Water Act. 40 C.F.R. section 124.2(a).

gent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made." CWA section 316(a).

The permittee generally bears the burden of showing qualification for the modification or variance, but sections 301(i), 301(k), 302(b)(2) and 307(e) simply require a determination by EPA that the permittee is qualified. Either way, since EPA "may" issue a variance or modification, it is within the agency's discretion to deny a variance even if the preconditions for a variance or modification are met.

Under the Clean Water Act, a permittee's ability to stay imposition of a standard during the pendency of a variance request is addressed in three of the Clean Water Act modification sections. While CWA section 301(n)(6) explicitly prohibits a stay pending a "fundamentally different factors" modification request,[71] CWA sections 301(j)(2) and (3) allow EPA to stay an effluent or water quality standard upon receipt of section 301(g) modification request if it determines there will be no "discharge of pollutants in quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment"

[71] A modification based on "fundamentally different factors" means that "the owner or operator of such facility demonstrates to the satisfaction of the Administrator that the facility is fundamentally different with respect to the factors (other than cost) specified in [CWA] section 304(b) or section 304(g) and considered by the Administrator in establishing such national effluent limitation guidelines or categorical pretreatment standards." CWA section 301(n)(1)(A).

and the permittee is likely to gain a variance on the merits. EPA may also require a bond to assure compliance. CWA section 301(j)(2).

EPA's variance regulations mirror the Act's requirements for section 301(g) modification requests for "nonconventional pollutants," and also require the posting of a bond "or other appropriate security." 40 C.F.R. section 124.64(c)(3). However, the regulations state that stays for other variances are to be governed under the stay procedures for contested permit conditions. See 40 C.F.R. sections 124.60 & 124.64(d). It is unclear to which variances these regulatory procedures are to apply, but the regulations imply that EPA will allow variances beyond those authorized in the statute.

The Act also prohibits modification of a permit "to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit." CWA section 402(o). Although powerful in concept, this "anti-backsliding" provision has numerous exceptions and may not be applicable to variances or modifications.

NPDES permits are issued for a fixed term, not exceeding five years. CWA sections 402(a)(3) & 402(b)(1)(B). Renewal can be denied for cause, which is defined as:

1. Noncompliance by the permittee with any condition of the permit;

2. The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

3. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or

4. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit (for example, plant closure or termination of discharge by connection to a POTW).

40 C.F.R. section 122.64(a). "Anti-backsliding" provisions apply to the renewal process. CWA section 402(o).

3) Revocation

EPA can revoke a permit for "cause" as described in CWA section 402(b). "Cause" is defined as including:

(i) violation of any condition of the permit;

(ii) obtaining a permit by misrepresentation, or failure to disclose fully all the facts;

(iii) change in any condition requiring either a temporary or permanent reduction or elimination of the permitted discharge.

CWA section 402(b)(1)(C).

EPA regulations add a further cause for revocation when "a determination [has been made] that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination." 40 C.F.R. section 122.64(a).

While EPA can revoke a permit for a violation of an effluent or water quality standard (as a permit condition), the regulations specify legal defenses available to permittees to defend against an alleged violation. Because enforcement measures are

triggered by a violation, a permittee can avoid sanctions by proving that no violation exists. In certain circumstances "upset" and "bypass" are allowable defenses. 40 C.F.R. section 122.41(m) & (n). However, the defense that "it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with conditions of [the] permit" is prohibited by regulation. 40 C.F.R. section 122.41(c).

"Bypass" is defined as the "intentional diversion of waste streams from any portion of a treatment facility." 40 C.F.R. section 122.41(m)(1). While generally prohibited, bypass is excused if it is "unavoidable to prevent loss of life, personal injury, or severe property damage," there were no "feasible alternatives," and the permittee submitted the required notice of the bypass to EPA. 40 C.F.R. section 122.41(m)(4). EPA decides if these conditions are met, although it must consider "reasonable engineering judgment" when determining whether feasible alternatives were available. 40 C.F.R. section 122.41(m)(4)(B). Bypass may be allowed as an affirmative defense to an alleged violation.

"Upset" is an unintentional "exceptional incident" resulting in temporary noncompliance with technology based standards. 40 C.F.R. section 122.41(n)(1). It is also an affirmative defense to an alleged violation. 40 C.F.R. section 122.41(n)(2). The permittee has the burden of proving that 1) an upset occurred, 2) the facility was properly operated at the time of the upset, 3) the permittee submitted the required notice of the upset con-

dition to EPA, and 4) the permittee implemented any reasonable remedial measures to correct the bypass and mitigate the damage caused by it. 40 C.F.R. section 122.41(n)(3) & (4).

In one situation, the Clean Water Act requires EPA to revoke a permit. If EPA determines that "the effluent from a source with a permit . . . is contributing to a decline in ambient water quality of the receiving waters," EPA "shall" revoke the permit. CWA section 301(m)(4). The Clean Water Act also gives EPA the discretion to terminate a permit if it determines that there has been a decline in ambient water quality during the period of the permit "even if a direct cause and effect relationship cannot be shown." Id.

b. Procedural Issues

1) Issuance

The Clean Water Act does not specify procedures for issuing or denying permits, but such procedures have been established by regulation. See CWA section 301; 40 C.F.R. sections 122 & 124. The proposed discharger must apply for a permit, and cannot legally discharge without one. 40 C.F.R. section 122.21. Applications must be submitted at least 180 days before discharge is to commence, must be complete, and must be signed by a "responsible corporate officer." 40 C.F.R. sections 122.21(c), 122.21(e) & 122.22(a)(1).

An exception to this application procedure is made for discharges covered under general permits, which authorize discharges

by a general category of pollutant source without case-by-case permitting. 40 C.F.R. section 122.28. If EPA decides an individual permit is necessary in general permit cases (concentrated animal feeding operations, separate storm sewers, and other facilities), EPA notifies the discharger that it must apply for a permit within 60 days. 40 C.F.R. section 124.52.

Forty C.F.R. section 124 governs the decision-making process for issuance and denial of several types of environmental permits, including NPDES permits. These regulations specify the types of hearings and procedures available to applicants whose permits are denied, and third-party challenges to permits which are granted. If a new permit is denied, the permit applicant may request a formal hearing, or petition for review of the denial. In these two cases, the issuance of the permit is stayed pending a final decision and the applicant remains without a permit. 40 C.F.R. section 124.60(a)(1).

The idea behind these regulations apparently is to freeze the status quo with respect to new applications until a final decision is made. If a source or facility is granted a permit and that decision is challenged by a third party who requests a hearing, the Presiding Officer of the hearing board may authorize the facility to begin discharging if the facility complies with all uncontested conditions of the final permit, and all other appropriate conditions imposed by the Presiding Officer. 40 C.F.R. section 124.60(a)(2). In the case of contested condi-

conditions, the Presiding Officer may allow discharge only if the permittee demonstrates that:

1. it is likely to receive a permit to discharge;

2. the environment will not be "irreparably harmed" by the discharge; and

3. the discharge is in the public interest.

40 C.F.R. section 124.60(a)(2).

Because the Presiding Officer may allow discharge pending a hearing, and because the standard for allowing the discharge, in part, is based on "irreparable harm," a wide range of potentially harmful discharges may be ongoing during the permit challenge process. Significantly, the permittee bears the burden of proving that all three conditions are met, so that any inconclusive finding should result in a continued prohibition of discharge.

The regulations defining the term "contested condition" are favorably written for the discharger. For example, contested conditions are automatically stayed. 40 C.F.R. section 124.60(c)(1). Further, if uncontested conditions cannot be operationally severed from contested conditions, even uncontested conditions are also stayed. 40 C.F.R. section 124.60(c)(4). If a permit condition clearly becomes uncontested during the course of hearings, the Presiding Officer, upon motion by any party, may order compliance with that condition, again subject to a stay. 40 C.F.R. section 124.60(d).

Other provisions enumerate methods for determining uncontested conditions, but their effect may be significantly impaired

by the automatic stay and severability procedures outlined above. 40 C.F.R. section 124.60(c)(2), (3) & (6). Thus, if a permit condition such as an effluent limitation is uncontested, but technology for achieving it is contested, both will be stayed under the severability rule. And even if the technology and effluent standard could be severed, compliance with the uncontested condition would be automatically stayed regardless of the discharger's ability to meet the standards.

2) Modification and Renewal

While the status quo is maintained during the application process for new permits, contested permit conditions for an existing source are stayed pending a formal hearing, or petition for review of the denial of a request for a formal hearing. 40 C.F.R. section 124.60(c)(1). A contested condition is defined by, and subject to, the same procedure described above. This stay provision creates an incentive for permittees to pursue the formal hearing process to its fullest extent in order to postpone meeting permit requirements.

While permits may be issued for no longer than five years, the conditions of an expired permit continue in force under 5 U.S.C. section 558(c) until the new permit is effective, so long as the permittee properly submitted a permit renewal application upon which EPA (or a state) did not act. 40 C.F.R. section 122.6(a). See also 40 C.F.R. section 124.5. If a formal hearing is granted upon an application for renewal, all

conditions of the existing permit as well as uncontested conditions of the new permit are fully effective pending final action. 40 C.F.R. section 124.60(e).

During the course of an application for renewal of a permit, a permittee may decide to apply for one of the numerous variances authorized under the Act. The regulations attempt to resolve variance requests quickly by allowing EPA to maintain separate procedures for deciding on the variance and the permit. However, if the variance hearing would "significantly delay the processing of the permit," the variance request may be separated from the permit proceeding. The regulations do not explicitly state who makes the determination of "significant delay," but they imply that the Regional Administrator would decide. Practically, this procedure may make little difference because pending variance requests can affect stays of the applicable permit conditions. 40 C.F.R. section 124.64. Thus, while a permit may continue through the process toward final approval, the variance request proceeding will control when compliance actually starts. If a variance request is made before a draft permit is issued, EPA may give notice of its decision on the variance when it issues the draft permit. 40 C.F.R. section 124.63(a)(1)(i).

3) Revocation

While revocation procedures are not addressed in the Act, the regulations governing revocation procedures apparently are identical to those described for revoking RCRA permits (see

infra, pages 75 to 77, and 82 to 84.) The most notable aspect of the revocation regulations is that EPA must follow the same lengthy process prescribed for issuance of a permit, including a full evidentiary hearing and appeal procedures. This goes far beyond the requirements of the Administrative Procedure Act. 5 U.S.C. section 558(c).

c. Analysis of the NPDES Permits

At first glance the NPDES program appears to embody many of the attributes of cost-effectiveness. Extensive provisions for administrative, civil and criminal penalties along with the NPDES permit system ostensibly present a formidable array of enforcement options. Unfortunately, there are statutory provisions which substantially undercut the statutory tools crafted by Congress. Additionally, EPA's burdensome procedural regulations, including its administrative hearing procedures, eviscerate much of the potential power of the statutory tools.

The NPDES permit system's cumbersome procedural regulations and automatic stay provisions render immediate permit suspension or revocation impossible, so that permit challenges are conducted on the agency's time, and the agency cannot act decisively against an alleged violator. The permit system also fails to embody the attributes of cost-effectiveness by restricting its effect to individual permitted facilities. Thus, permit violations by a corporation at one site have no impact on the status of that corporation's permits at its other sites. By limiting

the scope of any permit revocation action to the violating facility, EPA reduces the clout of its enforcement tool, because the sanctions it can impose do not dramatically raise the expected cost of noncompliance. In contrast, a more sweeping set of sanctions would discourage noncompliance by altering the violator's perception of the risk of noncompliance.

Further, EPA has not instituted a "permit bar" or "permit block" procedure. Such a procedure would make clean-up and remediation of past violations at all sites owned by the violator a pre-condition of receiving a permit. Thus, despite EPA's broad authority to set permit conditions and despite the fact the EPA has established by regulation prohibitions on permit issuance in certain situations, without a "permit bar" EPA relinquishes an important form of leverage it can use to influence strongly a permittee's perception of the risks associated with noncompliance. While EPA still can deny a permit when the permittee has a history of violations, this case-by-case approach lacks the certainty of a formal policy and consequently reduces the deterrent value of the sanction.

EPA also fails to require the posting of financial security to guarantee remediation in the case of insolvency and as an additional incentive for compliance. Without the threat of cash forfeiture in the case of a violation, EPA forfeits another form of leverage and also reduces the potential deterrent aspects of permitting.

One positive aspect of the Clean Water Act is that it provides EPA with very broad discretion to issue or deny permits. EPA can set its own conditions for issuance of permits and can deny a permit even if the applicant meets minimum statutory criteria. Thus, the agency has the opportunity to act decisively without a prior hearing, and compel the applicant to provide information. Since the Act sets few guidelines for EPA's decision to issue or deny a permit, appeal of a permit denial will often require the applicant to meet the difficult "arbitrary and capricious" standard to show that EPA abused its discretion. However, when EPA must consider certain factors in setting effluent and water quality standards, an applicant may have an easier time attacking EPA's standard setting decision, as EPA may have to show it considered the factors required by the Act. In certain circumstances, therefore, the agency may be required to carry the burden of proof. For example, EPA may have to show that its section 306 categorical source standards were determined considering "the cost of achieving such effluent reduction" as required by the CWA. This same problem exists when the Act's variance procedures mandate EPA's consideration of certain factors in its decision to issue or deny a variance.

Once EPA has issued or denied a permit, its decision may be challenged in formal administrative hearings. If a denied permit is subject to a formal hearing or request for a formal hearing (presumably by the applicant), the regulations specifically provide that pending the outcome of the hearings, the permit is not

effective. As the attributes suggest, the process takes place on the applicant's time, eliminating the applicant's incentive to extend the process. However, the regulations provide that if a permit is granted but is subject to a formal hearing or request for a formal hearing, EPA may authorize discharge prior to the conclusion of the hearings.

In order to receive authorization for discharge pending a formal hearing, the applicant appropriately has the burden of proving that he is likely to receive a permit and that the discharge is in the public interest. However, the third condition for authorization of discharge requires only that the discharge not cause "irreparable harm," allowing a wide range of harmful, but not "irreparably harmful," discharges. Perhaps more significantly, this procedure allows the rest of the permit issuance process to operate on the agency's time. Once the permittee receives discharge authorization, he will have a strong incentive to delay and extend the rest of the permit issuance process, particularly if there is any chance of a denial in the formal hearing. As long as the formal hearings drag on, no judicial appeal can be taken, since all administrative remedies must be exhausted before a judicial appeal can be made.

EPA has broad discretion to modify permit conditions if it has "cause" and the agency has enumerated an extensive list of causes for modification. However, when "cause" may exist, EPA's modification procedures give the permittee a strong incentive to extend and formalize the modification process.

Any proposed modification of a permit can be contested by the permittee, and all contested permit conditions are stayed. Also, any uncontested permit condition which cannot be severed from a contested condition is stayed. Thus, a permittee can contest a crucial element of a permit modification, such as a specified pollution control technology, and effectively avoid any discharge limitations based on the use of that technology. Along with the automatic stay of any modified condition, these procedures create opportunities for delay and help ensure that the process takes place on the agency's time.

EPA also has implemented procedures for variances that militate against the attributes of cost-effectiveness. While the Act is largely silent with respect to stays of effluent standards pending variance requests (and prohibits a stay in one instance), EPA apparently allows stays of permit conditions pending all variance requests. As a result, the agency loses its ability to force the dispute to be conducted on the permittee's time. In fact, EPA's regulations provide that most variance requests are governed by the same procedures as contested permit conditions. This may mean that once a variance request from an already permitted source is denied, it becomes a contested permit condition and is subject to a stay. Consequently, a permittee may use a variance request to delay imposition of new standards, again requiring extensive use of agency resources.

The Clean Water Act attempts to ensure continued progress toward its goal of eliminating discharge of pollutants through

its "anti-backsliding" provision, which prohibits permit modification if new effluent standards would be less stringent than the standards contained in the previous permit. While sound in concept, the "anti-backsliding" provision is riddled with numerous exceptions. Also, it may not operate against variances which are allowed when a permittee can demonstrate he is making the best effort within his means to minimize discharges.

Procedures for transfer of a permit do not embody the attributes of cost-effectiveness, and are not designed from an enforcement perspective. EPA's regulations provide for automatic transfer of a permit to a new owner upon minimum notice to EPA along with submission of a written agreement between old and new owners enunciating the transfer date. This places the burden on EPA to act to block the transfer. When issuing a permit, a major consideration should be the qualifications of the owner and/or operator of the facility, particularly when the agency is instituting a "permit bar" for past violators. By allowing transfer without an affirmative finding by EPA that the new owner is qualified, EPA exposes the public to the risk that imprudent transfers will go into effect by its inaction, and puts the applicant in control of the process.

Once a standard has been set, all existing permits should be automatically updated to incorporate the new standard. Automatic updating minimizes the cost to the agency of updating standards, and ensures that challenges will not be processed on the agency's time. The Act requires automatic updating in the case of toxic

standards and it is clearly within EPA's discretion to extend that requirement to other standards in its regulations. EPA's failure to require updating by operation of law allows a discharger to use its permit as a "shield" against new standards, since the Act deems compliance with a permit as compliance with statutory standards. EPA has the authority to require automatic updating as a permit condition, and its failure to do so forces it to follow the burdensome modification procedures which stay new standards if contested by the permittee. Instead of automatic compliance, permits are modified after much delay on the public's time.

NPDES permits are limited to a duration of five years, assuring an affirmative review by EPA on the permittee's compliance at least once every five years. While an optimum system would provide for more frequent mandated review, this interval is shorter than many permit systems, including the RCRA TSD facility permit. Still, the knowledge that an affirmative compliance determination must be made frequently serves as a deterrent to violations, and the NPDES system gives up leverage by extending the permit duration.

DMRs supplement EPA's ability to review a permittee's compliance, and EPA's right of entry and inspection allows further monitoring as is required. DMRs thus allow the agency to collect compliance information at the facility's expenses, and provide prima facie evidence of violations in some cases. Because DMRs shift the burden of proof from the agency to the alleged

violator, they conserve agency resources. Moreover, DMRs allow the agency to check continuously a corporation's compliance, thereby discouraging noncompliance.

EPA's system for detecting violations embodies several of the attributes of cost-effective enforcement. An important aspect of the program is that the permittee has the duty to monitor its compliance with effluent and water quality limits and must provide extensive monitoring data to EPA through DMRs.[72] While self-monitoring always involves the risk of a permittee providing inaccurate or fraudulent reports, it has the benefit of conserving agency resources. Also, since EPA makes its right to enter and inspect a facility a condition of any permit, the agency has the ability to verify the DMRs. Therefore, the agency can conduct unpredictable monitoring if it desires to do so.

Perhaps more important than the resource savings involved in self-monitoring, the DMR is a significant tool in detecting and prosecuting violations. Because the DMRs are prepared by the permittee they may serve as an admission, and many courts have accepted DMRs as the basis for granting a motion for partial summary judgment on the issue of liability in Clean Water Act cases.[73] Additionally, DMRs are signed and attested to by a

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[72] DMRs are required by most NPDES permits. They are periodic reports which detail the monitoring and analysis conducted by the permittee for the permit parameters, and may include upset reports and explanations of noncompliance.

[73] See J. Miller, Citizen Suits: Private Enforcement of Federal Pollution Control 132 & n.1 (1987).

corporate official under penalty of perjury. Thus, the agency can take action against an individual corporate official based on the DMRs in some instances.

Unfortunately, once EPA has discovered a violation, the permit process becomes a very ineffective means of addressing the violation. While a permit violation is ground for revocation of a permit, EPA regulations subject permit revocations to the same lengthy and burdensome process used for permit issuance and modification. Thus, EPA must proceed through public notice procedures, hearings and formal administrative appeals before revocation can take effect, and in the interim the violations may continue. This procedure cannot be expedited in the case of willful violations or even when the CWA mandates permit revocation. Consequently, even when faced with a potentially dangerous violation of statutory standards EPA cannot respond without a prior administrative hearing.

On the other hand, EPA's regulations concerning defenses to an alleged violation are useful in expediting the formal legal process. By prohibiting certain defenses and specifying that the permittee bears the burden of proving the elements of an "upset" or "bypass" defense, the regulations eliminate those litigation issues and aim toward making the elements of violation few, clear and simple. Further, by specifying the permittee's burden of proof in claiming these defenses, the regulations may deter violations when the permittee perceives that there are high costs associated with establishing the defenses.

3. CWA Civil Administrative Penalties

a. Description

The 1987 amendments to the Clean Water Act, Pub. L. No. 100-4, 101 Stat. 7 (1987), gave EPA authority to impose administrative penalties when it determines that any person has violated any condition of an NPDES permit or has violated section 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act. CWA section 309(g). EPA can act based on "any information available . . . after consultation with the State in which the violation occurr[ed]." CWA section 309(g)(1).

The Act defines a person as "an individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body." CWA section 502(5). Additionally, corporate officials have been held liable as "persons" under the Act. See United States v. Pollution Abatement Services of Oswego, Inc., 763 F.2d 133 (2d Cir.), cert. denied, 474 U.S. 1037, 106 S. Ct. 605 (1985). The criminal penalty section of the Act includes a special provision adding "responsible corporate official" to its definition of "person." CWA section 309(c)(6).

The CWA creates two classes of penalties, and both are available for all types of violations. Class I penalties can be as high as $10,000 per violation but cannot total more than $25,000. CWA section 309(g)(2). Class II penalties can be as high as $10,000 per day, but cannot total more than $125,000.

Id. Prior to imposing a Class I penalty, EPA must give the alleged violator written notice and an opportunity to request a hearing within thirty days of the notice. Id. The CWA specifically precludes use of formal procedures under section 554 or 556 of the Administrative Procedure Act (APA) for Class I penalties, but requires that the alleged violator be granted a "reasonable opportunity to be heard and to present evidence." Id. In contrast, EPA is required to follow APA section 554 procedures before imposing Class II penalties. Id.

The public also must have notice and a "reasonable opportunity to comment" on the proposed penalty. CWA section 309(g)(4)(A). Any commentors have the right to present evidence, and the right to request a hearing on the penalty if one was not held prior to the penalty order. CWA section 309(g)(4)(C). If the commentor provides material evidence not considered, EPA must set aside its order and hold an evidentiary hearing. Id. After a final administrative decision is reached, either the alleged violator or the commentor may seek judicial review in a federal district court for Class I penalties and in a federal circuit court of appeals for Class II penalties. CWA section 309(9)(8). Appeals must be filed within thirty days of the issuance of a final penalty order, and the order will be upheld unless the administrative record lacks "substantial evidence" supporting the penalty, or if EPA is found to have abused its discretion. Id.

In determining the amount of either type of penalty, EPA must consider:

> the nature, circumstances, extent and gravity of the violation, . . . [the violator's] ability to pay, any prior history of such violations, the degree of culpability, economic benefit or savings (if any) resulting from the violation, and such other matters as justice may require.

CWA section 309(g)(3). EPA is granted subpoena power to assist it in collecting documents, calling witnesses, and obtaining other information needed in any Class I or Class II penalty hearing. CWA section 309(g)(10).

Once a penalty is imposed and all appeals are exhausted, the Act provides substantial incentives for payment. EPA may request that the Department of Justice (DOJ) bring a civil action against the violator to collect the penalty. During any hearing in connection with the collection of the penalty, the "validity, amount, and appropriateness of such penalty shall not be subject to review." CWA section 309(g)(9). The penalty collects interest, the violator can be liable for collection costs including attorney's fees, and the aggregate amount due is subject to quarterly 20% penalties. Id.

EPA is prohibited from pursuing administrative penalties if it is already "diligently prosecuting" a judicial civil action seeking penalties for the same violations or if a state is prosecuting an action under a comparable state law. CWA section 309(g)(6).

b. Analysis of CWA Civil Administrative Penalties

Civil administrative penalties potentially embody several attributes of cost-effective enforcement. They can be imposed administratively, and in the case of Class I penalties, after a less than full evidentiary hearing, the agency can act decisively against alleged violators. They increase the agency's discretion in selecting enforcement tools to address violations. Because the penalties can be based on "any information available," only minimal agency resources need be extended to collect information to support the imposition of penalties. Furthermore, the Clean Water Act grants the agency subpoena power to collect information, call witnesses, and request documents. The subpoena power is another enforcement mechanism that the agency can employ, increasing its range of options against the alleged violator. Because the agency can request that DOJ bring a civil action to collect the penalty, and the amount, validity and appropriateness of the penalty will not be challenged in the civil action, the alleged violator will perceive that noncompliance can have high transaction costs. Thus the range of sanctions may significantly raise the expected cost of noncompliance.

The ceiling on imposition of administrative penalties hampers their ability to significantly raise the expected costs of noncompliance. Because Class I penalties are limited to $25,000, and Class II penalties are limited to $125,000, corporations against which such penalties may be assessed can calculate their

maximum monetary loss, and conceivably balance it against the benefits of noncompliance.

4. CWA Contractor listing

a. Overview of "Contractor Listing"

Preventing certain businesses that do not comply with environmental laws from receiving federal funds is the foundation of contractor listing. The listing provisions, statutorily found in both the Clean Air Act[74] and the Clean Water Act, empower the federal government to prohibit certain Violating facilities" from receiving federal grants, contracts, or other money. The listing provisions of the Clean Water Act define "violating facility" as a facility at which a CWA section 309 criminal violation has occurred (which leads to mandatory listing), or a facility with continuing or recurring violations where one of four other conditions exist (which leads to discretionary listing).[75] 40 C.F.R. sections 15.10 & 15.11. The term "facility" is defined geographically -- it is a place, not an entity. It is a location or site of operations owned, leased, or supervised by the federal contractor, grantee or borrowers.[76] 40

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[74] The Clean Air Act listing provisions will not be discussed in this report.

[75] See infra pp. 130-31 for a list of the conditions which can trigger discretionary listing under the Clean Water Act when the facility has continuing or recurring violations.

[76] The listing office has listed a contractor found guilty of criminal violation of section 404 of the CWA (for filling a wetland knowingly). It determined that the "facility" for purposes of 40 C.F.R. 15.11 is the business address of the contractor, even

C.F.R. section 15.4. Thus, if only one of a number of facilities owned by a business is subject to listing the other facilities may not be barred from receiving federal funds or doing business with the federal government.[77]

The policy behind contractor listing is simple: the federal government should not be doing business with facilities that violate environmental laws. The federal government has a strong interest in effective enforcement of its environmental laws, and each Federal agency "is empowered to enter into contracts for the procurement of goods, materials, or services or to extend Federal assistance by way of grant, loan or contract . . . in a manner that will result in effective enforcement of the . . . Clean Water Act."[78]

b. The Statutory Basis of the Power of Contractor Listing

Section 508(a) of the Clean Water Act states that "[n]o Federal agency may enter into any contract with any person, who has been convicted of any offense under [CWA section 309(c)], for the procurement of goods, materials, and services if such contract is

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though it performed services, and hence violated the CWA, at another location. This interpretation will be applied for discretionary listings as well and was originally developed under the Clean Air Act listing program to get at asbestos contractors.

[77] However, no facility under government contract or grant, or receiving federal money, can use the products of a listed facility. 50 Fed. Reg. 36,188 (1985).

[78] 40 C.F.R. section 15.1(a).

to be performed at any facility at which the violation which gave rise to such conviction occurred, and if such facility is owned, leased, or supervised by such person." In accordance with CWA section 508(c), Executive Order No. 11,738 (September 12, 1973) was issued to implement the listing provision.

Although the CWA only refers to listing based on criminal convictions, at least two federal district courts have upheld the discretionary listing regulations applicable to civil violations against a host of legal challenges, including due process claims and lack of statutory authority. See United States v. Interlake, Inc., 432 F. Supp. 987, 989 (N.D. Ill. 1977); United States v. United States Steel, 10 Env't Rep. Cas. (BNA) 1751, 1752 (N.D. Ill. 1977); United States v. Del Monte de Puerto Rico, Inc., 9 Env't Rep. Cas. (BNA) 1495, 1496 (D.P.R. 1976). The only court of appeals to address this issue has rendered "no opinion" concerning whether EPA can list facilities based on violations which are not criminal violations. ITT Rayonier Inc. v. United States, 651 F.2d 343, 344 & n.1 (5th Cir. 1981).[79]

c. How Contractor Listing Works

The application of the listing regulations in principle is very broad. The regulations apply to all agencies of the execu-

[79] In Rayonier, the plaintiff apparently argued that an examination of the CWA's legislative history reveals that EPA did not have the statutory power to extend the listing regulations to noncriminal convictions. ITT Rayonier Inc. v. United States, 651 F.2d at 344 & n.1.

tive branch, and all government contractors and subcontractors. Thus, contractors cannot hire listed subcontractors, nor can they use the products of listed contractors to meet the obligations of their government contracts.

As mentioned above, listing is facility specific -- it does not apply to other facilities of the same company. It is therefore conceivable that a listed facility could be owned by a large corporation with many other facilities that are not listed. Such a corporation would be eligible for government contracts at all of its facilities except the listed facility.

1) Mandatory Listing Based on a Criminal Conviction

Mandatory contractor listing is relatively straight-forward. If a facility which gave rise to a conviction is owned, leased, or supervised by any person who has been convicted of a criminal offense under CWA section 309(c), the facility shall be placed upon the "List of Violating Facilities." 40 C.F.R. section 15.10.[80] The mandatory listing procedure requires no hearing and is effective upon conviction. 40 C.F.R. section 15.13(a). "Conviction" means a guilty plea, a jury or judge verdict of guilty,

[80] The terms "owned, leased or supervised" are not defined in the CWA or its regulations. These terms are contained in the statutory provision which creates the contractor listing power. CWA section 508(a). The "List of Violating Facilities" means the list of facilities which are barred or suspended from receiving government funds. 40 C.F.R. section 15.4.

and a plea of nolo contendere. 50 Fed. Reg. 36,188, 36,189 (1985).

2) Discretionary Listing

Discretionary listing is more complicated procedurally than mandatory listing. Discretionary listing can be based on any number of criminal or civil violations of the "clean water standards," but before a facility is listed, a "final agency action" must be taken. In order to list a facility, the "final agency action" must determine that the facility recommended for listing has a record of "continuing or recurring noncompliance" with clean water standards and that one of the following conditions is met:[81]

1. a state or local court has convicted the person who owns, leases or supervises the facility of a criminal offense on the basis of noncompliance with clean water standards;

2. a federal, state or local court has issued an injunction, order, judgement, decree (including consent decree), or other form of civil ruling as a result of noncompliance with clean water standards at the facility; or

3. the facility has violated any administrative order issued under section 309(a) of the CWA.

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[81] "Clean water standards" means any enforceable limitation, control, condition, prohibition, standard, or other requirement which is established pursuant to the CWA or contained in an NPDES permit, or issued by a local government to ensure compliance with the pretreatment regulations. 40 C.F.R. section 15.4. "Continuing or reoccurring violations" means a violation which continues to exist, or a series of violations over time. EPA will determine whether a violation or a series of violations is continuing or reoccurring on a case-by-case basis. 50 Fed. Reg. 36,188 (1985).

4. EPA has filed an enforcement action in federal court under section 309(b) of the CWA due to the facility's noncompliance with the clean water standards.

40 C.F.R. section 15.11.

A "final agency action" is defined according to the procedure associated with the listing. Several actions may be considered final agency action. For example, within thirty calendar days of the recommendation of listing, the facility may request a hearing before a "case examiner."[82] If it does not request a hearing, the facility will be added to the list of violating facilities if it is determined that there is a record of continuing or recurring noncompliance, and the requisite enforcement action has been taken. The facility's addition to the list will be considered a final agency action. 40 C.F.R. section 15.12(d) [83]

The listing proceeding will be conducted in an informal manner, without formal evidentiary rules or procedure, although the hearing shall be transcribed and a record shall be compiled. EPA and the person requesting the listing may be represented by legal counsel. Oral and written evidence may be presented. If

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[82] A "case examiner" is an EPA official familiar with pollution control issues who is designated to conduct a listing or removal proceeding. He may not be (1) the listing official, (2) the recommending person or his subordinate, or (3) closely involved in the underlying enforcement action. 40 C.F.R. section 15.4.

[83] The Assistant Administrator determines whether the criteria for listing are met. 40 C.F.R. section 1512(d).

the case examiner approves, the attorneys may conduct cross-examination and questioning. No enforcement sensitive information need be disclosed. 40 C.F.R. section 15.13(b)(1) & (2).

The record must demonstrate an adequate basis for listing. It must show by a preponderance of the evidence that there is a record of continuing or recurring noncompliance at the facility, and that the requisite enforcement action has been taken. 40 C.F.R. section 15.13(b)(3). Not later than thirty days after the conclusion of the listing proceeding (and supplementation of the record, if any) the case examiner shall issue a written decision, and file it with the listing official. The listing official shall notify the recommending person and the requestor of the case examiner's decision and of the opportunity to request that the Office of General Counsel (OGC) review the decision. 40 C.F.R. section 15.13(c) & (d). Within thirty calendar days after notice of the decision, the facility may file a written request with the OGC requesting that the decision be reviewed. Review will be limited to the issues raised before the case examiner, unless the OGC determines that there is "good cause" to include consideration of "new issues." 40 C.F.R. section 15.14. If no request for OGC review is made, the case examiner's decision is a final agency action. Id.

d. Challenging the Listing

If the owner, operator or supervisor of the listed facility files a request for review by OGC within thirty days, OGC shall

review the record to "determine if the decision . . . is correct based on the record of the listing proceeding considered as a whole." 40 C.F.R. section 15.14(c). As soon as practicable, OGC shall issue a final written decision which explains the basis for the final decision. The OGC's decision constitutes final agency action. If no request for OGC review is taken, the case examiner's decision is considered final agency action. 40 C.F.R. section 15.14 (c) & (d). The discretionary listing is effective upon the issuance of the final agency action. 40 C.F.R. section 15.15.

The list of violating facilities is published twice a year in the Federal Register by the listing official, who, in addition to other information, publishes the effective date of the listing. The listing is limited to one year from the placement of the facility on the list of violating facilities. After the year is over, the facility shall be removed from the list unless the condition giving rise to the listing still exists, or some other condition which subjects the facility to listing exists. 40 C.F.R. section 15.21(3).

e. Exceptions to Listing

The regulations contain certain exemptions to listing. For example, transactions equal to or less than $100,000 are not covered by these regulations. Contracts for indefinite quantities or services (if the amount ordered in a year is believed to be less than $100,000) also are exempt. Grants, contracts or

other money provided to facilities for assistance to abate, control or prevent environmental pollution are exempt if the principal purpose of the grant, loan or funds is to assist the facility to comply with some environmental law or regulation. These exemptions do not apply to listing based on criminal convictions under the CWA.

A broad power to exempt facilities is granted to the heads of agencies. An agency head can exempt a facility, or class of facilities, if it is in the "paramount interest" of the United States to do so. Additionally, listing will not apply to a facility if it produces goods or services in the paramount interest of the United States.

f. Removal from the List of Violating Facilities

Facilities that have been listed subject to a mandatory listing shall be removed only when the Assistant Administrator (AA) certifies that the condition giving rise to the mandatory listing has been corrected. If a conviction had been overturned, removal shall be automatic. 40 C.F.R. section 15.20.

Facilities that have been listed pursuant to a discretionary listing procedure are listed for a period of one year. Listed facilities may be removed prior to the end of this year in certain circumstances. For example, a facility may be delisted if the basis for the discretionary listing has been removed (e.g., state criminal conviction has been overturned), or if the AA

determines that condition giving rise to discretionary listing has been corrected. 40 C.F.R. section 15.21(a). Furthermore, the listing official has the discretion to remove a facility from the list if the AA determines that the facility is on a plan for compliance which will correct the conditions which led to the listing. 40 C.F.R. section 15.21(b).

After one year, a discretionary listing based on violating an administrative order, a notice of noncompliance, or the filing of an enforcement action due to noncompliance with clean water standards is terminated, unless a basis for mandatory listing arises, or a state or local court convicts a person of a criminal offense based on noncompliance of clean water standards or a federal, state or local court issues an injunction, order, judgment, decree or other form of civil ruling as a result of noncompliance with clean water standards. 40 C.F.R. section 15.21.

Any person who owns, operates, or supervises a facility on the list, or the recommending person, may file a request for removal, which must be based on one of the reasons listed above.[84] 40 C.F.R. section 15.22. The request for removal is subject to an elaborate administrative procedure. First, the AA shall review the request, and issue a decision as expeditiously as practicable. Failure to make a decision within 45 days constitutes a denial. Id. Second, within thirty days after the AA

[84] If a timely request for a removal hearing is not made, a request may be filed "based on new information." 40 C.F.R. section 15.23(b).

denies a request for removal, the owner, operator or supervisor of facility, or the recommending person, may file a written request for a removal hearing. 40 C.F.R. section 15.23.

The removal hearing shall be conducted by a case examiner. The requestor must demonstrate by a preponderance of the evidence that a basis for removal is present. The same type of hearing as for listing is provided, and the case examiner's decision shall be based on the record. 40 C.F.R. section 15.24. Within thirty calendar days after the date of the case examiner's decision, the owner, operator, or supervisor of the facility may file a request for the AA to review the case examiner's decision. 40 C.F.R. section 15.25. If a timely request is not filed, the case examiner's decision is a final agency action. If the request for removal is denied, the person may file a new request "based on new information." 40 C.F.R. section 15.25(d).

g. Analysis of Contractor Listing

Contractor listing, especially mandatory listing, is a potentially powerful enforcement authority that embodies many of the enforcement authority attributes. The elements that trigger a listing are straight-forward and few; the listing can increase greatly the costs of noncompliance because it prohibits a facility from receiving government contracts and other government money; the hearing procedure, although somewhat complex, is carried out in a forum that is deferential to the agency's judgement, and the party challenging the listing is limited to the

record. Thus, in a court of law, the trier of fact would review the listing on an "arbitrary and capricious" standard. The party challenging the listing, not the agency, bears the burden of going forward and the burden of persuasion.

Several aspects of the contractor listing authority violate the nine enforcement authority attributes. For example, the statutory language limits the application of the authority to a single facility. The authority would be more cost-effective if it were applicable to the corporation that owned or occupied the facility. This broader authority would allow the agency to dramatically increase the cost of noncompliance and the perception in the regulated community of the sanctions that accompany noncompliance. Also, the detailed hearing and removal procedures set forth in the listing regulations expend agency resources that could be better applied to other activities.

CHAPTER 5

SUMMARY AND CONCLUSIONS

Enforcement is a key component of environmental laws and one of EPA's fundamental functions. Enforcement cuts across all environmental media and regulatory programs, touching almost every aspect of EPA's efforts to administer environmental statutes. Despite its importance, no consensus yet exists concerning the manner in which environmental enforcement should be carried out, and whether enforcement efforts are effective in deterring violations.

Past enforcement efforts have focused on bringing administrative or judicial actions against violators, and typically have been evaluated based upon the number of civil and criminal actions from year to year. While such "bean counting" may indicate the level of EPA enforcement activity over time, it provides little insight into whether these actions have a significant deterrent effect on the regulated community, and thus whether they positively affect compliance behavior.

This report is the first phase of a two phase study by ELI of EPA's enforcement program. It examines the motivations underlying corporate noncompliance behavior; seeks to evaluate qualitatively whether current enforcement programs are capable of successfully counteracting these motivations; and addresses whether these enforcement programs are producing deterrence in a cost-effective way, by providing the maximum deterrence benefits

per enforcement resources consumed. The overall study seeks to answer two fundamental questions: (1) given its resource constraints, does EPA have the enforcement tools necessary to successfully deter noncompliance behavior, and (2) do EPA strategies, guidelines, regulations and procedures enhance or limit the deterrence benefits and implementation costs of its enforcement tools?

This Phase I report concerns the qualitative assessment of EPA's "enforcement authorities" in terms of their potential to deter noncompliance and their costs of implementation. This focus recognizes that any program evaluation must begin with a careful analysis of the strengths and weaknesses of the available enforcement authorities, as crafted by the Congress and as implemented by EPA.

To structure the analysis, this paper first reviewed theories of noncompliance behavior, as well as alternative enforcement objectives and policies. This review led to two conclusions which form the basis for the analysis that follows. First, while corporate compliance behavior likely is affected by a wide-ranging set of factors and forces, the enforcement literature generally agrees that the principal motive underlying noncompliance is the desire to avoid the costs imposed by regulation. Second, since environmental statutes and regulations mandate specific levels of pollution control, the objective of enforcement should be to secure and maintain the highest possible rate of compliance with established pollution control levels.

Taken together, these approaches suggest that enforcement programs should strive to maximize compliance by using detection efforts and enforcement response mechanisms to ensure that the regulated community's perceived expected costs of noncompliance are equal to or greater than the expected benefits of noncompliance. In other words, detection efforts and enforcement response mechanisms should be used to influence and modify the economic self-interest of the regulated community.

EPA's ability to influence and modify compliance behavior is severely limited by resource constraints and the difficulty in detecting environmental violations. Scarce enforcement resources coupled with significant detection problems means that many violations may go undetected. This suggests that enforcement authorities must be able to threaten the imposition of sanctions that are perceived by the regulated community as sufficient to offset less-than-certain probabilities of detection. In addition, because enforcement resources are limited, the agency needs to implement enforcement authorities at minimum cost, so that enforcement resources are conserved.

The need for cost-effective economic deterrence places a premium on identifying the potential and actual deterrence benefits of EPA's enforcement authorities, as well as the costs of implementing these tools. Accordingly, a qualitative evaluation framework was developed to facilitate such an analysis. The framework sets out nine features or attributes of enforcement that can increase the potential deterrent benefits and/or mini-

mize the agency costs of enforcement response. The attributes are based on ELI's review of the major factors underlying non-compliance behavior and knowledge of the important substantive, procedural and institutional elements of enforcement.

Selected RCRA and CWA enforcement authorities were examined in light of the enforcement attributes. The RCRA authorities include permits and civil penalties. The CWA authorities include permits, civil administrative penalties, and contractor listing. Using the attributes, the selected enforcement authorities were analyzed with respect to their potential to promote deterrence, as well as their potential to minimize implementation costs. Although this report examines only selected EPA enforcement authorities, the enforcement attributes are equally applicable to the enforcement tools that this report does not address.

The analysis indicates that the Congress generally has provided EPA with less than ideal enforcement powers under the water and hazardous waste statutes. Moreover, EPA has often adopted regulations that appear to diminish the deterrent power of tools and that make tools harder to implement. Most of the enforcement authorities examined are not as powerful, comprehensive or easy to use as they could be. For example, the CWA NPDES permits apply only to "point sources," and thus a single permit may not cover all operations at a facility. In fact, a large facility may have several NPDES permits, so that the agency may be required to police and enforce several point source discharges per facility. Precious enforcement resources would be conserved

if NPDES permits were facility based; the agency could more effectively police and enforce one permit that covers the entire facility than several point source permits.

Even in situations in which EPA has been given a potentially adequate enforcement power, the agency often has adopted implementing regulations that severely limit the potential deterrent effect of the enforcement mechanism and increase the costs of using the mechanism. For example, EPA routinely allows for transfer of NPDES permits after only minimal notice if a facility changes ownership. If the facility has been in repeated or continuous violation of its NPDES permit conditions, or if the new owner or operator has a history of noncompliance at other facilities, EPA bears the burden of blocking the permit transfer, and must expend its valuable enforcement resources if it wishes to do so.

There are also examples of EPA regulations that are drafted in a manner that increases the potential deterrent effect and minimizes costs to the agency. For example, EPA has crafted monitoring regulations for NPDES permits that require permitted facilities to collect monitoring data and submit it to the agency. If the data reveals a violation, the agency may take action against the permitted facility on the basis of the data, and the defenses available to the facility are limited. Thus, the agency has created a violation in which the elements of proof are few, clear and simple, and the facility bears the burden of

proving that the data it collected does not support the violation.

This Phase I report illustrates the need for a more comprehensive evaluation of the strengths and weaknesses of EPA's enforcement tools. It also points out that in at least two ways, the agency can use the attributes to help design enforcement authorities that are comprehensive, powerful and easy to use. First, in describing its enforcement needs to the Congress, it can apply the attributes to seek enforcement powers in which cost-effectiveness will be enhanced. Second, in revising old enforcement regulations and designing new ones, the attributes should be carefully considered. They will serve to enhance the cost-effectiveness of enforcement. In other words, these nine attributes may serve as a prototype for seeking cost-effective enforcement authorities from the Congress, and developing cost-effective regulations.

In the second phase of the study, ELI will analyze additional agency authorities according to the evaluation framework to illustrate the potential advantages and disadvantages of these tools. Phase II also will examine possible statutory and regulatory changes that could be sought or implemented directly by the agency, as well as new ways to use the existing tools. All of the suggestions will be directed toward achieving more effective enforcement at lowest cost to the agency. The approaches suggested in Phase II will take into account political, legal, and practical ramifications of the proposed changes and provide

likely advantages and disadvantages of each approach. ELI also will examine ways to minimize problems anticipated in seeking or implementing each approach; will examine non-traditional, market-based enforcement mechanisms; and will review potential uses of laws outside the environmental arena to encourage compliance with environmental laws.

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